NEW

# Canon

## The Complete Manual

Independent guides to essential techniques

Canon
EOS 70D
CANON ZOOM LENS EF-S 18-135mm 1:3.5-5.6 IS STM
φ67mm

## Welcome to

# Canon

## The Complete Manual

Canon is arguably the biggest name on the photography market, and within this bookazine we'll discover why. Learn about the essential kit, how to clean your camera and the best lenses to use for all sorts of images. We will also take you through the best way to compose your shots, using the flash and some other useful accessories. The How to section will assist you with a variety of shots and the best way to achieve them. Finally, we'll help you get to grips with Canon's powerful editing and sharing software.

Canon
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EOS 700D

# Canon
## The Complete Manual

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**Distributed in the UK, Eire & the Rest of the World by**
Marketforce, Blue Fin Building, 110 Southwark Street, London, SE1 0SU
Tel 0203 148 3300, www.marketforce.co.uk

**Distributed in Australia by**
Network Services (a division of Bauer Media Group), Level 21 Civic Tower, 66-68 Goulburn Street,
Sydney, New South Wales 2000, Australia, Tel +61 2 8667 5288

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**Canon The Complete Manual** © 2014 Imagine Publishing Ltd

ISBN 978 1910 155 608

Part of the Digital Photographer bookazine series

IMAGINE PUBLISHING

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> "Attracting enthusiasts through to top professionals, a Canon camera can offer something for everyone"

# Introducing Canon

Newcomer through to seasoned professional; whatever your level, Canon offers several cameras to meet your needs. Come with us as we highlight a few favourites…

Canon has long been revered as one of the 'big two' heavyweight brands in the camera market, and even with the emergence of strong rival brands, Canon has always held its place. The company is still one of the most popular go-to brands for all walks of photographer; from complete newbie to lifetime professional.

The thing that sparks customers' interest, and what keeps them returning time after time, is the brand's complete obsession with perfection. Whether customers are shooting for pleasure or profit, Canon has created a wide-ranging remit of cameras that not only creatively empower its users, but also extend technology that immortalises frame after frame in impeccable detail. Today Canon cameras are universally regarded as being as reliable as they are high-performing, as feature-rich as they are well-built, as capable of award-winning picture quality as they are user-friendly. There is rarely something missing from one of its models, and it's even rarer to find a bad review of one of its products. Over the next few pages, we profile some of the top-selling and much-loved contenders.

MENU
SET
Q
INFO.
Canon

# DSLR

## Attracting enthusiasts through to the world's top professionals, a Canon DSLR offers something for everyone

Canon's arsenal of DSLR cameras is something that is ever-growing and ever-improving. Many of the world's photography elite are proud to own one or several models, and even everyday photography fans can enjoy the product, thanks to the range of DSLRs on offer. The range is helpfully split into three groups; Beginners, Enthusiasts and Professionals.

The beginner models are designed for keen amateurs who want to upgrade from a compact. As such, the DSLRs in this category are more simplistic and offer helpful guides and self-explanatory controls to aid newcomers.

The EOS range for enthusiasts supports those looking to challenge themselves and those who may want to take the next step towards becoming a semi-professional. The cameras feature enhanced technology and provide a wider choice of commands on the camera body.

As well as sporting a steeper price tag, DSLR models in the pro end of the market range deliver expert standards, performance and consistency for creating extreme high-end photography.

**Comfortable design**
Canon's DSLR control layout and general design hasn't altered much over the years, but its intuitiveness and accessibility are regularly praised by the media and the brand's legions of fans

**Categories**
Canon groups its DSLR models into three families; Beginners, Enthusiasts and Professionals

**ISO ranges**
The DSLR models sport impressively wide sensitivity ranges with most scaling beyond ISO 12,000 making low-light handheld photography a genuine possibility

**Feature packed products**
Canon's DSLR range boasts state-of-the-art features and innovative technology. Most offer Wi-Fi and NFC connectivity, GPS and function for full HD movies

**Touch-screen technology**
A growing number of DSLRs, like the brand's compact range, now house touch-screen LCD monitors and undoubtedly aids those who prefer the way smart devices operate

**Lens love**
Canon produces three categories of lenses; EF for the full-frame DSLRs, EF-S for those with cropped sensors and EF-M for owners of the CSC model

## Technical data

| | |
|---|---|
| **Price** | Price: £5,300 /$6,799 (body only) |
| **Megapixels (effective)** | 18.1MP |
| **Max resolution (pixels)** | 5184 x 3456 |
| **Sensor information** | 36 x 24mm full-frame 18.1MP CMOS sensor |
| **Lens data** | Lens dependent |
| **Zoom** | Lens dependent |
| **Focus/macro** | Lens dependent |
| **Shutter speed** | 30 -1/8000 sec |
| **ISO sensitivity** | 100 - 51,200, expanded to 204,800 |
| **Exposure modes** | P, S, A, M, Auto |
| **Metering options** | Evaluative, Partial, Spot, Centre weighted |
| **Flash modes** | E-TTL II Auto Flash, Metered Manual |
| **Weight** | 1340g |
| **Dimensions (mm)** | 158 x 163.6 x 82.7mm |
| **Storage** | 2x CompactFlash Type I/II |
| **LCD** | 3.2" Clear View II TFT, 1040k |
| **Viewfinder:** | Pentaprism, approx 100% coverage |

▲ Packed with features and capable of imaging excellence, the Canon EOS-1D X joins the brand's professional rank of DSLRs to critical acclaim

## Summary

Part of Canon's professional range of DSLRs, the 1D X is an ideal step up for keen shooters looking to trade in their prosumer DSLR.

# Canon EOS-1D X

The Canon EOS-1D X's price tag and high-end feature set are two reasons why this camera suits the professional quarter of the market. Combing speed with image quality, the camera delivers an unrivalled shooting performance, courtesy of its full frame 18.1MP sensor and Dual DIGIC 5+ processor. The result is greater control over depth of field, picture clarity and noise. Elsewhere the camera sports an impressive burst shooting speed of 12fps, or 14fps in High Speed mode with mirror lock up. What's more, the mode can power out up to a jaw-dropping 180 large jpegs or 38 RAW files, which will undoubtedly excite action, sports and wildlife fanatics. Add this to the native sensitivity gamut of ISO 100-51200, which expands to a colossal ISO 204800, and the 1D X looks to be an enviable contender in this elite echelon of the DSLR market.

The 1D X promotes a superb autofocus, exposes without fault and handles noise like the best of them. Where the full-frame DSLR may cause one niggle is its incredible bulk, which may deter some outdoor and travel photographers. That said, its build quality undeniably assures longevity; this is a camera that is built to last and will provide its owners with years of loyal service.

# Canon EOS 7D

The Canon 7D boasts one of the most impressive feature troves on the pro-enthusiast market. There's an enhanced 18MP cropped CMOS sensor, 8fps burst mode, Full HD movie-capturing, a 19-point AF system, 63 zone metering, an electronic level and an integrated Speedlite transmitter. In terms of design, the control and menu layouts are streamlined and intuitive, and its magnesium alloy build exudes a reassuring sense of rigidity. The 7D is a well-engineered camera, created to provide prosumers with flawless imagery.

## Summary

**An oldie but a goody, the 7D has a loyal fan base among semi-professionals and serious enthusiasts.**

## Technical data

| | |
|---|---|
| **Price** | £1,699/$1,499 (body only) |
| **Megapixels (effective)** | 18MP |
| **Max resolution (pixels)** | 5184 x 3456 |
| **Sensor information** | 22.3 x 14.9mm APS-C 18MP CMOS sensor |
| **Lens data** | Lens dependent |
| **Zoom** | Lens dependent |
| **Focus/macro** | Lens dependent |
| **Shutter speed** | 30 - 1/8000 sec |
| **ISO sensitivity** | 100 - 6,400, expanded to 12,800 |
| **Exposure modes** | P, S, A, M, Auto |
| **Metering options** | Evaluative, Partial, Spot, Centre weighted |
| **Flash modes** | Auto, Manual, Multi flash, Integrated Speedlite Transmitter |
| **Weight** | 820g |
| **Dimensions (mm)** | 148.2 x 110.7 x 73.5mm |
| **Storage** | CompactFlash Type I/II (Microdrive compatible, UDMA compatible) |
| **LCD** | 3" Clear View II TFT, 920k |
| **Viewfinder:** | Pentaprism, approx 100% coverage |

# Canon 6D

The 20.2MP full-frame sensor Canon 6D sports a lightweight yet ruggedly strong shell, which has the bonus of also being moisture and dust resistant. Sitting neatly within Canon's serious enthusiast range of DSLRs, the 6D boasts state-of-the-art technology such as an 11-point AF, GPS, Wi-Fi and an ISO range that expands to a gargantuan ISO 102,400. Proving itself more than capable of achieving well-exposed, colour-rich imagery, the 6D is in the perfect position to aid prosumers pursue a higher pedigree of photography.

## Summary

**Sporting a full frame sensor, the 6D produces stunning imagery and handles magnificently.**

## Technical data

| | |
|---|---|
| **Price** | £1,799/$1,899 (body only) |
| **Megapixels (effective)** | 20.2 |
| **Max resolution (pixels)** | 5472 x 3648 |
| **Sensor information** | 36 x 24mm CMOS |
| **Lens data** | Lens dependent |
| **Zoom** | Lens dependent |
| **Focus/macro** | Lens dependent |
| **Shutter speed** | 30 - 1/4000 sec |
| **ISO sensitivity** | 50 - 102,400 |
| **Exposure modes** | Auto, P, A, S, M, 7 scene modes |
| **Metering options** | Evaluative, Partial, S, CW |
| **Flash modes** | A, Metered manual, E-TTL II |
| **Weight** | 755g without memory card |
| **Dimensions (mm)** | 144.5 x 110.5 x 71.2 mm |
| **Storage** | SD, SDHC or SDXC |
| **LCD** | 3" 1040k dots, ClearView TFT |
| **Viewfinder:** | Pentaprism, approx 97% field of view |

# CSC

## Canon's one and only mirrorless interchangeable lens camera is an ideal choice for enthusiasts and prosumers alike

The EOS M, like other mirrorless interchangeable lens cameras, was designed to aid enthusiasts to take their first steps into DSLR-style photography; offering the flexibility of lens choice and a full range of manual controls and enhanced technology all within the portable, compact body of a bridge.

As well as attracting photographers looking to step up to a more challenging platform, the EOS M makes for an affordable choice for semi-professionals looking for a sensible back-up model. This has been made even more attractive as owners can purchase an optional mount adaptor (EF-EOS M) to enjoy the full support of the EF and EF-S lens range, meaning they can team the shooter with their existing collection of lenses as well as any new EF-M range products they might like to explore.

Canon
CANON ZOOM LENS EF-M 18-55mm 1:3.5-5.6 IS STM
φ52mm

**Beginner to pro**
Whether you're an enthusiast stepping up from a compact or a semi-professional looking for a reliable backup, the EOS M has something for everyone

**Touch screen controls**
As well as the onbody controls, photographers can use the bright 3" 1040k dot touch screen LCD to make changes

**Image size**
The EOS M's large APS-C size sensor allows photographers to print images as large as A2 and retain sharp and defined details

**Hybrid**
The EOS M, like CSCs in general, blends the build quality and ease-of-use of a bridge, with the heightened features, controls and enhanced picture quality of a DSLR

**Lenses galore**
As well as accessing the new EF-M range of specific CSC lenses, users can purchase an optional mount adaptor (EF-EOS M) to enjoy the support of the EF and EF-S lens range, too

**Movie magic**
Like other CSCs on the market, the EOS M offers full HD video recording, but here we see the addition of Video Snapshot where the photographer shoots a series of short clips that can be edited together in-camera

# Canon EOS M

As the first of its kind, the EOS M has set a rather high benchmark for other CSCs set to join Canon's contingent of hybrid cameras. It promotes an 18MP APS-C CMOS sensor, 3" 1040k dot touch screen LCD, an ISO scale that tops out at ISO 25,600, full 1080p HD recording and a flash hot shoe for enhanced lighting control.

The EOS M's appearance matches that of the cameras in its EOS DSLR range, just smaller and dare we say, cuter. Available in black, silver, white and red, the EOS M looks more stylish than its bridge counterparts and obviously offers the bonus of a lens mount and the ability to switch lenses to suit the shooter's purpose.

Unlike some of its competitors, the EOS M's handling is in keeping with some of Canon's bridge models and so brand loyalists stepping up from the compact format to the CSC should feel at ease here, and the touch screen LCD is a boon for photography newcomers. In essence, it is the perfect blend of a PowerShot, with its easy-to-use control layout and lightweight nature, matched with the heightened dexterity of its entry-level DSLRs.

Picture quality, as expected, wows. Considering this is Canon's debut CSC, many expected there to be a few chinks in the model's armour, but it ticks all the boxes. The EOS M consistently produces balanced exposures, strong punchy colours, richly defined details and well-controlled noise throughout the majority of the sensitivity scale, all at a moderately affordable price. What's not to like?

## Technical data

| | |
|---|---|
| **Price** | £449.99/$599.99 18-55mm kit lens (it isn't sold as body only) |
| **Megapixels (effective)** | 18MP |
| **Max resolution (pixels)** | 5184 x 3456 |
| **Sensor information** | 22.3mm x 14.9mm CMOS |
| **Lens data** | Lens dependent |
| **Zoom** | Lens dependent |
| **Focus/macro** | Lens dependent |
| **Shutter speed** | 30 -1/400 sec |
| **ISO sensitivity** | 100-25,600 |
| **Exposure modes** | A, Scene (7), P, SP, AP, M |
| **Metering options** | E, P, CW, S |
| **Flash modes** | A, M, Fon, Foff |
| **Weight** | 298g with battery |
| **Dimensions (mm)** | 108.6 x 66.5 x 32.3mm |
| **Storage** | SD / SDHC / SDXC |
| **LCD** | 3" inches 1040k dots, touch screen Clear View LCD II |
| **Viewfinder:** | n/a |

▲Currently the only CSC camera in the Canon family of cameras, the EOS M aims to attract photography enthusiasts and keen amateurs alike

## Summary

The EOS M is a lightweight and compact sharp shooter that still manages to produce exceptional image quality.

# Bridge/ Superzoom

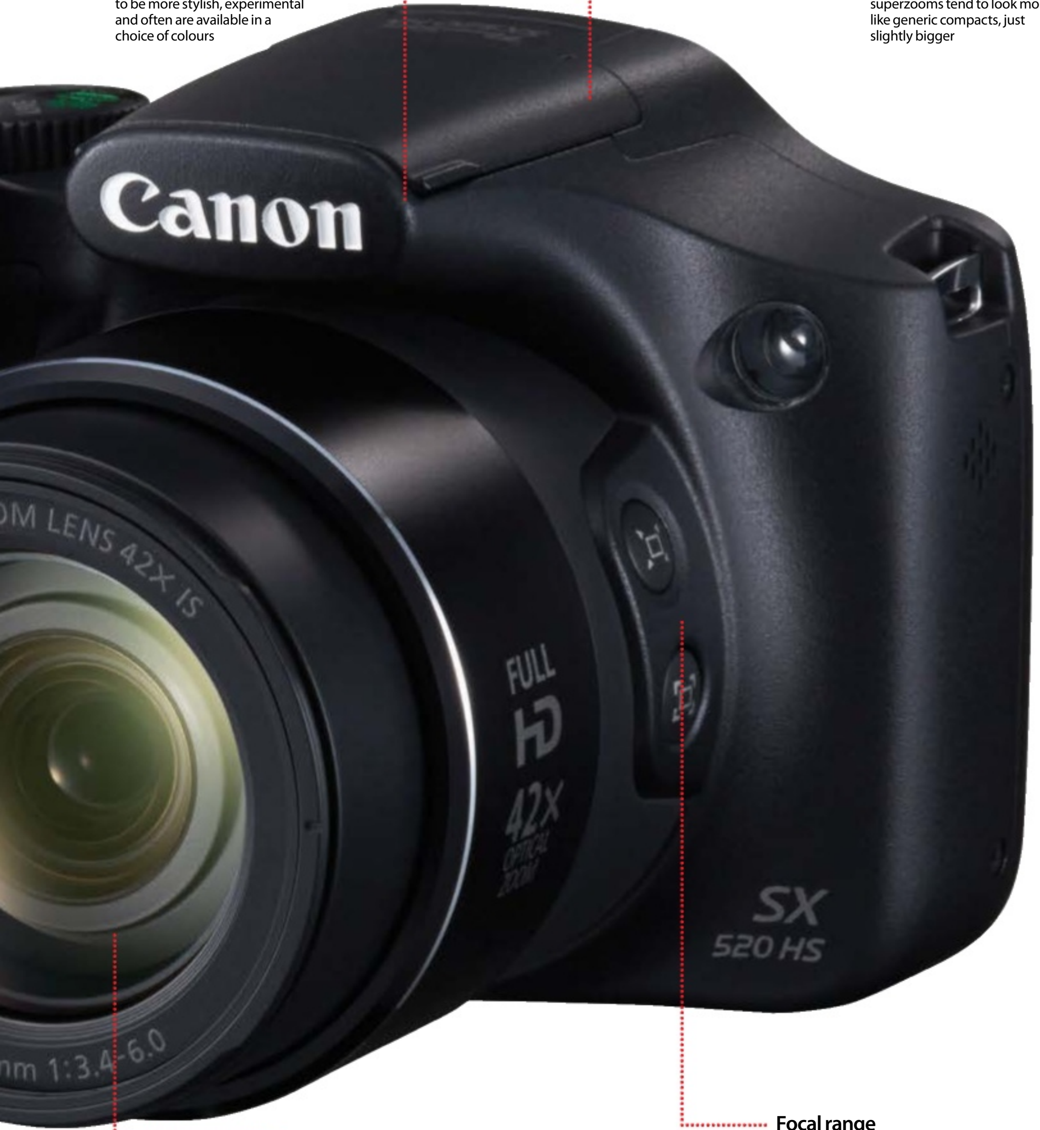
Canon's bridge and superzoom cameras are ideal for zooming across vast distances for the perfect shot

Both bridge and superzooms are compact, but they also share one other familiar trait; they provide huge zooms that deliver impressive focal ranges, sometimes in excess of 1000mm (equivalent). This attracts photographers who particularly enjoy shooting at vast distances such as sports, action, wildlife and street photography. Bridge cameras look like mini DSLRs, the main difference being that the big lens doesn't detach. They only tend to be available in black and are considered larger and bulkier than other compacts, but this is because they usually offer larger focal ranges, like the PowerShot SX50 HS, which provides a jaw-dropping 50x optical zoom. Another draw of this type of shooter is that they normally feature an integrated viewfinder, which some photographers find easier to compose shots with when shooting far into the distance. Superzooms, on the other hand, are smaller than their bridge counterparts, and as such can't quite match the range of a bridge, but tend to don more stylish, colour-vibrant metal-casings.

CANON ZOO
4.3-180.6m

**Manual mode**
Manual and semi-manual modes are regular features of bridge and superzoom models, as the breed of camera tends to attract the more adventurous shooter

**Zoom zoom!**
Bridge and superzooms tend to offer two types of zoom: optical and digital. Multiplying the two together results in the total combined zoom



**Superzoom stylish**
Where bridge cameras are similar in look, superzooms tend to be more stylish, experimental and often are available in a choice of colours

**Bridge vs superzoom**
Bridge bodies are more reminiscent of DSLRs, whereas superzooms tend to look more like generic compacts, just slightly bigger

**Genre happy**
As this breed of compact features such a wide focal range, the camera suits photographers who enjoy multiple genres; from landscapes to portraits, wildlife to sports, bridge cameras are an ideal match

**Focal range**
The main draw of bridge and superzoom cameras is their titanic focal range, taking photographers from wide angle (24-25mm) through to its telephoto reach (500mm plus)

Canon
30x OPTICAL ZOOM
CANON ZOOM LENS 30x IS
4.5-135.0mm 1:3.2-6.9
SX700 HS

# PowerShot SX700 HS

Heading the bill of the Canon PowerShot SX700 HS's impressive assets is an incredible 30x optical zoom and 4x digital zoom that culminates in an eye-watering 25-750mm focal range. What's more, to enhance detail sharpness the camera's lens sports lens-shift image stabilisation and a native sensitivity range that reaches ISO 3200; crucial when pushing the lens to its full telescopic reaches.

Like other bridge and superzoom cameras that house huge lenses, the SX700 HS is bulky and weighty, but it feels tough and built to last. It does also seem that a great deal of effort has been made to ensure photographers have a user-friendly experience as the design boasts a stable camera grip, logical layout of controls so that everything is within easy reach and an accessible handling process that caters for beginners through to seasoned shooters thanks to its full range of exposure modes. The only thing missing here is a touch screen LCD and the option to shoot in RAW.

The camera meters accurately, producing balanced exposures that resonate with sharp detailing and punchy colours. There is slight barrel distortion at wide angle and some purple fringing in high contrast scenes, but no more than you'd reasonably expect with this breed of shooter. The noise reduction software isn't overly zealous, but we have to be honest and say it is disappointing to note that noise is evident from as low as ISO 800.

## Technical data

| | |
|---|---|
| **Price** | £329/$350 (body only) |
| **Megapixels (effective)** | 16.1MP |
| **Max resolution (pixels)** | 4608 x 3456 |
| **Sensor information** | 1/2.3 type back-illuminated CMOS |
| **Lens data** | f3.2-6.9, 4.5-135mm (equivalent 25-750mm) |
| **Zoom** | 30x optical, 4x digital |
| **Focus/macro** | 1cm |
| **Shutter speed** | 15 - 1/3200sec |
| **ISO sensitivity** | 100 - 3,200 |
| **Exposure modes** | A, Scn (7), P, M, Av and Tv |
| **Metering options** | E, CW, S |
| **Flash modes** | A, Fon, Foff, SS |
| **Weight** | 269g with battery |
| **Dimensions (mm)** | 112.7 x 65.8 x 34.8mm |
| **Storage** | SD / SDHC / SDXC |
| **LCD** | 3" PureColor II G TFT 922k dots |
| **Viewfinder:** | n/a |

▲This travel compact's huge zoom, superb ease-of-use and stylish design gets set to tempt holiday-makers right through to travel photographers

## Summary

The market-killing zoom (25-750mm) goes some way to make up for its lack of RAW mode and noise performance, and is a perfect companion for travel enthusiasts.

# PowerShot SX520 HS

The SX520 HS superzoom delivers a sterling 42x zoom, a 16MP sensor, 1080p movies and the brand's Eco mode for prolonged battery life.

A new and exciting feature set to grab the attention of seasoned shooters is the addition of a front dial, so that when coupled with manual modes, bridge photographers have the ability to wield more control. The quality of imagery exceeds expectations, generating flawlessly even exposures, sharp details for the majority of focal lengths and accurate colour rendition.

## Summary

An affordable bridge camera with an impressive 42x zoom; perfect for nearly all subjects and scenes.

## Technical data

| | |
|---|---|
| **Price** | £299/$399 (body only) |
| **Megapixels (effective)** | 16MP |
| **Max resolution (pixels)** | 4608 x 3456 |
| **Sensor information** | 1/2.3 type back-illuminated CMOS |
| **Lens data** | f3.4 – 6.0, 4.3-180.6mm (24-1008mm) |
| **Zoom** | 42x optical, 4x digital, 84x ZoomPlus |
| **Focus/macro** | 4.3cm |
| **Shutter speed** | 1-1/2000 sec |
| **ISO sensitivity** | 100 - 3,200 |
| **Exposure modes** | A, Scene (6), P, SP, AP, M |
| **Metering options** | E, CW, S |
| **Flash modes** | A, M, SS, Fon, Foff |
| **Weight** | 441g with battery |
| **Dimensions (mm)** | 120.0 x 81.7 x 91.9mm |
| **Storage** | SD / SDHC / SDXC |
| **LCD** | 3" inches 461k dots TFT |
| **Viewfinder:** | n/a |

# PowerShot SX50 HS

The SX50 HS's powerful 50x optical ultra zoom and 4x digital zoom combines to deliver a focal length range that tops out at an unbelievable 1,200mm, making it ideal for almost all genres, but particularly wildlife, street and sports. The huge lens equates to a heavy and bulky build, but no more so than on other bridges, plus the SX520 HS sports a viewfinder. It's easy to use, and beginners won't have any problems achieving impressive images; the quality of which is reliably consistent and strong.

## Summary

The largest zoom in Canon's line up of bridge and superzoom, the SX50 HS provides a broad lens.

## Technical data

| | |
|---|---|
| **Price** | £449/$429.99 (body only) |
| **Megapixels (effective)** | 12.1MP |
| **Max resolution (pixels)** | 4000 x 3000 |
| **Sensor information** | 1/2.3 type back-illuminated CMOS |
| **Lens data** | f3.4 - 6.5, 4.3-215mm (24 - 1200mm) |
| **Zoom** | 50x optical, 4x digital, ZoomPlus 100x |
| **Focus/macro** | 0cm |
| **Shutter speed** | 1 - 1/2000 sec |
| **ISO sensitivity** | 80 - 6,400 |
| **Exposure modes** | A, Scene (6), P, SP, AP, M |
| **Metering options** | E, CW, S |
| **Flash modes** | A, M, SS, Fon, Foff |
| **Weight** | 595g with battery and card |
| **Dimensions (mm)** | 122.5 x 87.3 x 105.5mm |
| **Storage** | SD / SDHC / SDXC |
| **LCD** | 2.8" inches 461k dots PureColor II G TFT |
| **Viewfinder:** | EVF 202k dot, 100% coverage |

# Compact

Canon's compact range is plentiful and varied. We explain the differences so you can choose the one for you…

Canon produces two varieties of compact camera: PowerShot and IXUS. The differences between the two families come down to their target audience as the IXUS is aimed at people who simply want to point-and-shoot, whereas the PowerShot branch is intended for those who want to pursue photography. As such, the IXUS compacts tend to be slimmer and less equipped, whereas the PowerShot range incorporate bigger lenses with longer zooms and heartier technology, which results in larger cameras.

Canon segments its collection of compacts from both branches into the following categories: Expert, Bridge, Superzoom, Wi-Fi, Point and Shoot, Underwater and adventure, and finally Low-light cameras. Keen photography enthusiasts should look in particular at the Expert, Bridge, Superzoom and Low-light assortment of compacts as the majority of these models feature manual as well as automatic modes, creative filters, RAW support, bright lenses for low-light shooting and vast focal ranges for exploring photography genres.

**Heightened controls**
Canon's compacts are designed to be easy to use, but some offer even more control for an enhanced user experience such as the S series, which use a customisable Lens Control Ring, and the G series which provide multiple customisable front and rear controls

**Telescopic lenses**
The bridge and superzoom collections feature cameras that boast huge focal ranges; currently the PowerShot SX50 HS claims the largest zoom (50x optical)

CANON ZOOM LENS 5x IS
3.9
G1X

### On the go

A growing number of Canon's compact collection now feature Wi-Fi and NFC connectivity technology which means users can shoot, share and send on the go

### HS System

The majority of the brand's compacts, especially those that are considered high-end, feature Canon's HS System, which boasts big high-sensitivity CMOS sensors and the fast DIGIC processors

### Low-light lenses

Canon's low-light cameras are ideal for shooting when the sun goes down as models like the Canon PowerShot G16 features a superbly wide aperture of f1.8

### Accessorise

There are numerous accessories, which compact users can buy to broaden their camera's scope for creativity, including Speedlites, tele-convertors, viewfinders, underwater housing and remote controls

Canon
CANON ZOOM LENS 5x IS
G1X
3.9

# PowerShot G1 X Mark II

This is an updated version of the extremely popular G1 X original. In its latest form, the 'expert range' compact sees the addition of a faster, longer lens, Wi-Fi and NFC connectivity, a touch screen vari-angle LCD, an enhanced auto-focus system and dual lens control rings. As well as these new additions, the brand has made one notable reduction; the removal of the integrated viewfinder which may disappointment some photographers, although users can purchase an optional electronic viewfinder.

The G1 X Mark II hosts an all-encompassing selection of controls on its stylish and strong metal chassis. Newcomers can take advantage of the automatic and scene modes, whilst veteran photographers will find the camera's manual and semi-manual setup easy to explore. Finally, an arty range of filters bridges the gap between levels, and is a fantastic resource for creative shooters.

One of the biggest draws is the image quality, as the camera's sensor makes it one of the only compacts on the market to gift photographers with DSLR-like control over depth of field. Its fast and bright lens coupled with an ISO range that features well-controlled noise levels up until ISO 1600, makes it an ideal choice for shooting in low-light. Exposure is consistently accurate, colour values are strong and realistic, and details are punchy.

## Technical data

| | |
|---|---|
| **Price** | £799/$800 (body only) |
| **Megapixels (effective)** | 12.8MP |
| **Max resolution (pixels)** | 4352 x 2904 |
| **Sensor information** | 1.5 type Canon high-sensitivity CMOS (18.7mm x 14mm) |
| **Lens data** | f2.0-f3.9, 12.5 – 62.5 (24-120mm) |
| **Zoom** | 5x optical, 4x digital, 10x ZoomPlus |
| **Focus/macro** | 5cm |
| **Shutter speed** | 60 - 1/4000 sec |
| **ISO sensitivity** | 100 - 12,800 |
| **Exposure modes** | A, Scene (6), P, SP, AP, M |
| **Metering options** | E, CW, S |
| **Flash modes** | A, M, SS, Fon, Foff |
| **Weight** | 558g with battery |
| **Dimensions (mm)** | 116.3 x 74.0 x 66.2mm |
| **Storage** | SD / SDHC / SDXC |
| **LCD** | 3" inches 1040k dots PureColor II Touch screen TFT |
| **Viewfinder:** | Optional EVF |

▲ A feature-rich, high-end, strong-performing expert compact, capable of creating the most impressive image quality on the market

## Summary

It can be argued there aren't many stronger shooters in this corner of the compact market, but its rather steep price-point does bring it into contention with CSCs and DSLRs.

# PowerShot S120

Canon
CANON ZOOM LENS 5x IS
5.2-26.0mm 1:1.8-5.7
S120

Donning an enviably bright f1.8 lens, fast 9.4fps burst, vast ISO range and Wi-Fi, the PowerShot S120 enters as the fifth camera to join Canon's critically acclaimed 'expert' compact range. Like most Canon compacts, this high-end shooter is responsive, and offers an unequalled handling experience. Image quality is strong, with the majority of pictures being well-exposed, displaying sharp details and rich, accurate colours. Noise is successfully managed until ISO 1,600 but the camera's noise reduction software can over soften on occasion.

## Summary

An 'expert' touch-screen compact ideal for those seeking a high-performance shooter.

## Technical data

| | |
|---|---|
| **Price** | £450/$450 (body only) |
| **Megapixels (effective)** | 12.1MP |
| **Max resolution (pixels)** | 4000 x 3000 |
| **Sensor information** | 1/1.7 type back-illuminated CMOS |
| **Lens data** | f/1.8 – f/5.7 5.3 – 26mm (equivalent 24-120mm) |
| **Zoom** | 5x optical, 10x ZoomPlus, 4x digital |
| **Focus/macro** | 3cm |
| **Shutter speed** | 250 - 1/2500 sec |
| **ISO sensitivity** | 80 - 12,800 |
| **Exposure modes** | A, P, SP, AP, M, Scene (7) |
| **Metering options** | E, CW, S |
| **Flash modes** | A, Fon, Foff, SS |
| **Weight** | 217g (with battery and card) |
| **Dimensions (mm)** | 100.2 x 59 x 29mm |
| **Storage** | SD, SDHC, SDXC |
| **LCD** | 3" PureColor II G Touch screen LCD |
| **Viewfinder:** | n/a |

# PowerShot SX280 HS

Cramming an impressive 20x optical zoom and a 40x digital zoom under the hood, the SX280 HS allows photographers to shoot at an equivalent wide-angle focal length of 25mm right through to a telescopic 500mm, making it ideal for landscape, portrait, wildlife and street photography enthusiasts. Proving to be a feature-rich travel compact, the camera touts GPS, Wi-Fi, manual modes, Full HD movies (60fps) and a hearty 12.1 MP image sensor.

## Summary

Representing excellent value for money, this compact shooter outputs high-quality images.

## Technical data

| | |
|---|---|
| **Price** | £299/$280 (body only) |
| **Megapixels (effective)** | 12.1MP |
| **Max resolution (pixels)** | 4000 x 3000 |
| **Sensor information** | 1/2.3 type back-illuminated CMOS |
| **Lens data** | f3.5 – 6.8, 4.5-90mm (equivalent 25 -500mm) |
| **Zoom** | 20x optical, 40x digital |
| **Focus/macro** | 5cm |
| **Shutter speed** | 1 - 1/3200 sec |
| **ISO sensitivity** | 80 - 6,400 |
| **Exposure modes** | A, Scene (7), P, SP, AP, M |
| **Metering options** | E, CW, S |
| **Flash modes** | A, M, SS, Fon, Foff |
| **Weight** | 233g with battery |
| **Dimensions (mm)** | 106.4 x 62.8 x 32.6mm |
| **Storage** | SD / SDHC / SDXC |
| **LCD** | 3" inches 461k dots PureColor II G TFT |
| **Viewfinder:** | n/a |

# Set up your Canon

Everything you need to get more from your new Canon camera

Whether it's an upgrade or your first step into the world of photography, a new camera is an exciting purchase. However, a shiny new Canon camera with all its buttons and dials can be a little overwhelming, leaving you wondering how to get started.

In this guide, we will take you through the process of setting up your camera from the moment you take it out of the box. Once it's ready, continue to the other guides and discover how lenses work, what the modes do, how to take different styles of photos and finally what to do with your shots once you have taken them. So what are you waiting for? Lift the lid and let us help you get started!

## What you'll need Essential extras for your camera

### Camera bag

A camera bag helps keep your kit safe and secure on the go. There are many types available, from shoulder bags to backpacks, all of varying sizes.

### Cleaning cloth

Dust and smudges on your lens can show up in your photos. Carry a microfibre cloth and use it to keep your LCD screen clear, too.

### Memory card

Check whether your camera requires an SD, SDHC or SDXC card or a micro version, and buy one for your camera to store your photos on.

## What's in the box? Learn about the important bits supplied in the box

**1** You should be supplied with cables for connecting your kit to other devices.

**2** Keep hold of the manual, as you'll need it to learn about your specific camera.

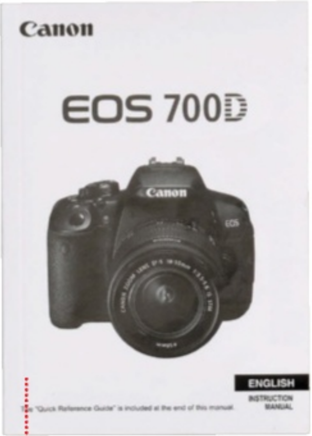
**3** New cameras usually come with a digital copy of the manual and editing software.

**4** Plug your camera into the charger for a few hours before you start setting up.

**5** Take off any protective film covering the LCD screen before you get started.

**6** If you've purchased a CSC or DSLR, then it will probably come with a kit lens.

**7** Use the supplied camera strap to reduce the risk of dropping your camera.


Canon
EOS 700D
ENGLISH
INSTRUCTION MANUAL

**1 USB cables**

**2 Manual**

Canon
EOS 700D

Canon
EOS Software Instruction Manuals Disk v1/13 7ML
CEL-SU1AA2M0
Canon
BATTERY CHARGER
CHARGE
FULL

**3 Software**

**4 Battery charger**

**5 Camera**

**6 Lens**

**7 Strap**

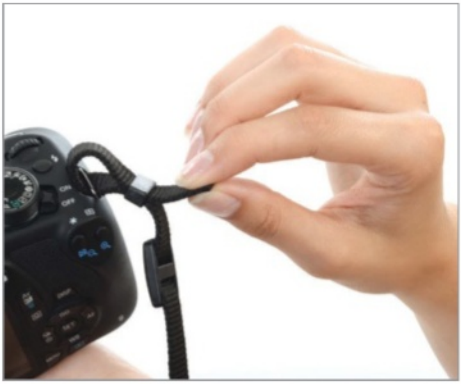
Canon
EF-S 18-55mm

# Prepare your Canon

Set up your new Canon the right way to start shooting your best-ever shots

**1 Insert the battery** Insert your camera battery into the battery chamber, which is usually found on the bottom of the camera. If your battery is low on power or your camera does not turn on, you will need to charge it up using the supplied charger.

**2 Attach the lens** If you have an interchangeable lens camera, remove the cap on the front of your camera and the cap on the bottom of the lens. Align the markings on the lens and camera and turn the lens clockwise to lock it.



**3 Attach the strap** Feed each end of the strap through the lugs on either side of the camera and then secure it into place. Adjust the length so that it's comfortable for you to carry around and hold when you are out shooting.

**4 Insert the memory card** Before you start shooting, insert a memory card to store your photos on. The memory card slot can usually be found on the bottom or side of the camera and will show you which way round to insert it.

**5 Focus the viewfinder** If your camera has an optical viewfinder, then you will need to focus it correctly so that you have a clear view of what you're shooting. Rotate the dioptre dial next to the viewfinder until the view appears sharp.

## Delve into your Canon's menu

**1 Set the date and time** Input the correct time and date so this information will be recorded with your photos, making them easier to organise. You will find this option in the Settings menu.

**2 Format the card** Formatting your memory card will set it up for your camera and improve performance. It will also delete any content on the card, so back everything up first.

**3 Adjust the LCD** Ensure the LCD screen is bright enough to see your shots. Some cameras adjust brightness automatically, or you can do it from the menu.

**4 Choose a file type** In the Quality section, set the type and size of files. JPEG is standard, but some cameras can shoot RAW, which you have to process.

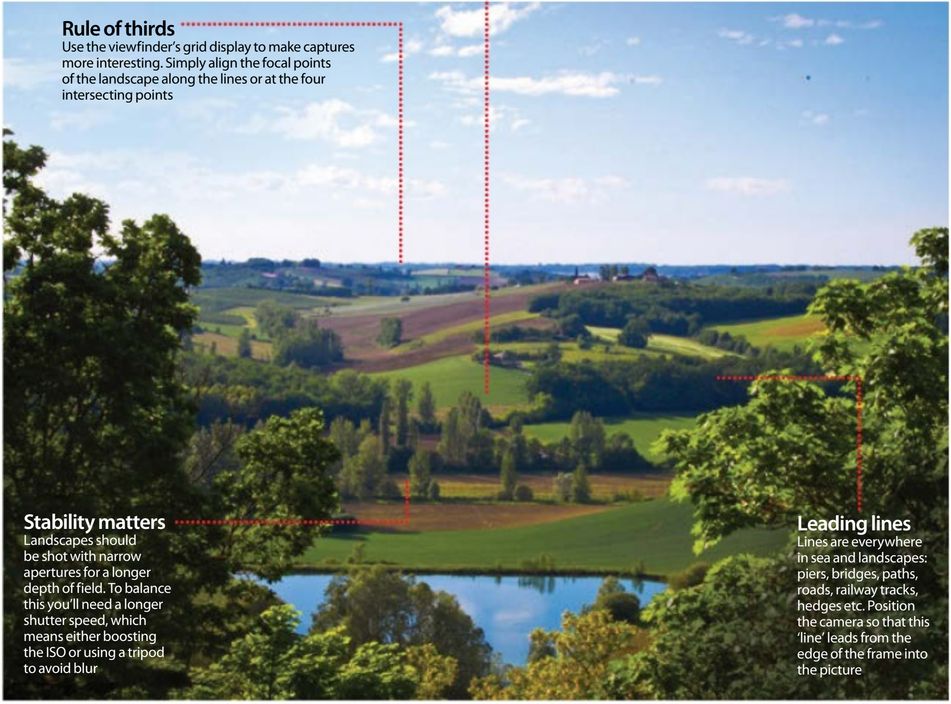
Canon
CANON ZOOM LENS EF-S 18-135mm 1:3.5-5.6 IS STM
φ67mm

# Pick the right Canon lens

Discover which Canon lenses you need to capture the shots you want

The beauty of DSLRs and CSCs is the ability to change the lens depending on the mood, occasion or subject. For shooting sweeping vistas and landscapes, photographers plump for a focal length of 28mm or lower. For portraiture a standard or 'normal' telephoto is required carrying a focal length of between 35 and 85mm because this is what the eye is used to seeing. Medium telephotos of 100 to 300mm are prized by wildlife and action enthusiasts, whereas super-telephotos of 300mm gift sports fans with what they need to reach the heart of the action. In this complete guide to Canon lenses you'll find everything you need to know about choosing the right lens for the job, as well as tips for getting a perfect shot.

# Landscape



**Ultra-wide and wide**
To encompass the entirety of the scene before you with the least amount of distortion, you'll need a wide- or ultra-wide angle lens (16-28mm)

**Rule of thirds**
Use the viewfinder's grid display to make captures more interesting. Simply align the focal points of the landscape along the lines or at the four intersecting points

**Stability matters**
Landscapes should be shot with narrow apertures for a longer depth of field. To balance this you'll need a longer shutter speed, which means either boosting the ISO or using a tripod to avoid blur

**Leading lines**
Lines are everywhere in sea and landscapes: piers, bridges, paths, roads, railway tracks, hedges etc. Position the camera so that this 'line' leads from the edge of the frame into the picture

## Take a look Top lenses for flawless landscape shots

### EF 16-35mm f/4L IS USM

Designed for experts and enthusiasts alike, this wide-angle zoom lens is the perfect weapon of choice for any and all landscape lovers, thanks to its suitable and versatile focal range with constant f/4 aperture. The lens, which also happens to be water and dust resistant, offers full-time manual focusing and a fast silent AF, so precision is assured, whichever mode it is that you choose.

**Price** £1,199/$1,199
**Web** www.canon.co.uk

### EF-S 10-18mm f/4.5-5.6 IS STM

A perfect lens for prosumers wishing to wield more creativity than is offered from most standard wide-angle lenses, as this ultra-wide angle enters the realms of fisheye focal lengths; suitable for more adventurous landscapes. The magnificently affordable lens features a manual focus ring, circular aperture, Super Spectra Coating and 4-stop optical Image Stabiliser for pin-sharp pictures.

**Price** £299/$299.99
**Web** www.canon.co.uk

### EF-M 22mm f/2 IS STM

Broadening its lens arsenal for users of its Compact System Camera, the EOS M, Canon's EF-M 22mm wide-angle prime lens works exceptionally well in low light so is a great choice for dawn, dusk and night photographers. The lens, much like the camera that it supports, is compact and lightweight, with the added bonus of an aspheric lens element that delivers high resolution and high contrast.

**Price** £230/$249.99
**Web** www.canon.co.uk

# Portraits

**Don't say 'cheese'**
Getting your subject to say 'cheese' will destroy any sincere emotion they have to offer. Aim to capture a variety of moods, from sombre to joyful, from stern to silly

**Aperture values**
Whereas landscapes require a wide depth of field, portraits typically use narrower ones, thus concentrating on the person or their face rather than the background. Plump for an aperture of between f4.5 and f6.3

**Colour speaks volumes**
Colours influence the overall connotation of an image so make sure the hues match the tone you're striving for. For example use soft, pastel shades for newborns and bold colours for children

**The best light**
The best light for photographing people in is good yet diffused light (think of a softbox). So a cloudy day is better than a cloud-free day as the clouds soften the rays, which is more flattering and less likely to cause shadows

## Take a look Instantly improve portraits with the right lens

### EF-S 18-55mm f/3.5-5.6 IS STM

This is a superb multi-functional lens that was introduced in order to appeal to entry-level Canon DSLR photographers. The versatile focal range makes the lens suitable for several genres but in particular portraiture as it offers the photographer the ability to capture models in an environment or close up; perfectly replicating the subject as the eye would see it.

| | |
|---|---|
| **Price** | £240/$249.99 |
| **Web** | www.canon.co.uk |

### EF 40mm f/2.8 STM

A realistically affordable prime lens that is particularly suitable for portraiture. The portable pancake design makes it suitable for location shoots, where its smooth and quiet STM focusing is a boon for shooting movies. The fast f2.8 maximum aperture gifts portrait photographers with the ability to shoot subjects in low-light and still retain high image quality.

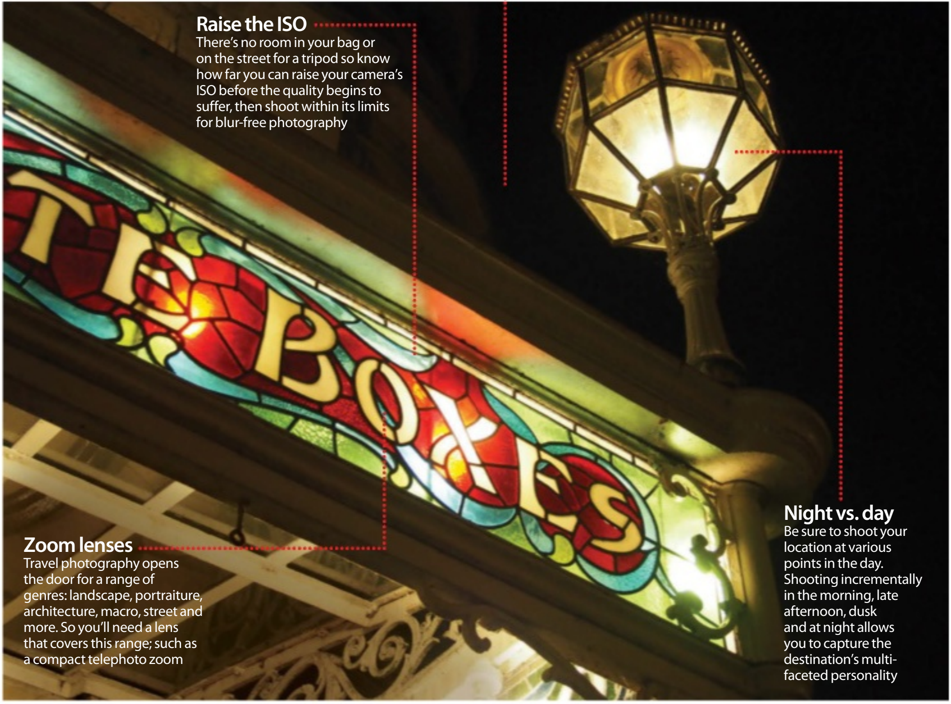
| | |
|---|---|
| **Price** | £230/$199.99 |
| **Web** | www.canon.co.uk |

### EF 35mm f/2 IS USM

Suited to semi-pros and professionals, the EF 35mm offers first-class optical technology in a compact design. As well as suiting portraiture, the lens lends itself to reportage, landscape and travel photography. Because it borders the realms of wide-angle, it's a great lens for shooting subjects within a scene or environment, so could also benefit wedding and fashion photographers.

| | |
|---|---|
| **Price** | £799.99/$599.99 |
| **Web** | www.canon.co.uk |

# Travel



**Street candids**
Nothing tells the tale of a place more than its people. Adopt a stealthy approach, have your settings ready, and either shoot from the hip or be confident and get close

**Raise the ISO**
There's no room in your bag or on the street for a tripod so know how far you can raise your camera's ISO before the quality begins to suffer, then shoot within its limits for blur-free photography

**Zoom lenses**
Travel photography opens the door for a range of genres: landscape, portraiture, architecture, macro, street and more. So you'll need a lens that covers this range; such as a compact telephoto zoom

**Night vs. day**
Be sure to shoot your location at various points in the day. Shooting incrementally in the morning, late afternoon, dusk and at night allows you to capture the destination's multi-faceted personality

## Take a look Quality lenses to deliver optimum travel shots

### EF 24-70mm f/4L IS USM

A lovely little lens that is absolutely perfect for travel photography thanks not only to its compact and lightweight design, but also because it hosts a neat range of focal lengths, allowing travellers to capture landscapes through to portraits. What's more, the built-in IS increases shot sharpness and as a result, will mean you're less dependent on using a tripod or boosting the ISO.

**Price** £1,499.99/$1,499

**Web** www.canon.co.uk

### EF-S 18-135mm f/3.5-5.6 IS STM

The EF-S18-135mm offers travellers a versatile focal range for capturing a greater variety of scenes and subjects from wide-roaming landscapes to shooting through crowds for telescopic street candids. What's more for those with a penchant for movie-making the lens features a Dynamic Image Stabilizer for smoother footage and quiet STM while focusing.

**Price** £480/$549.99

**Web** www.canon.co.uk

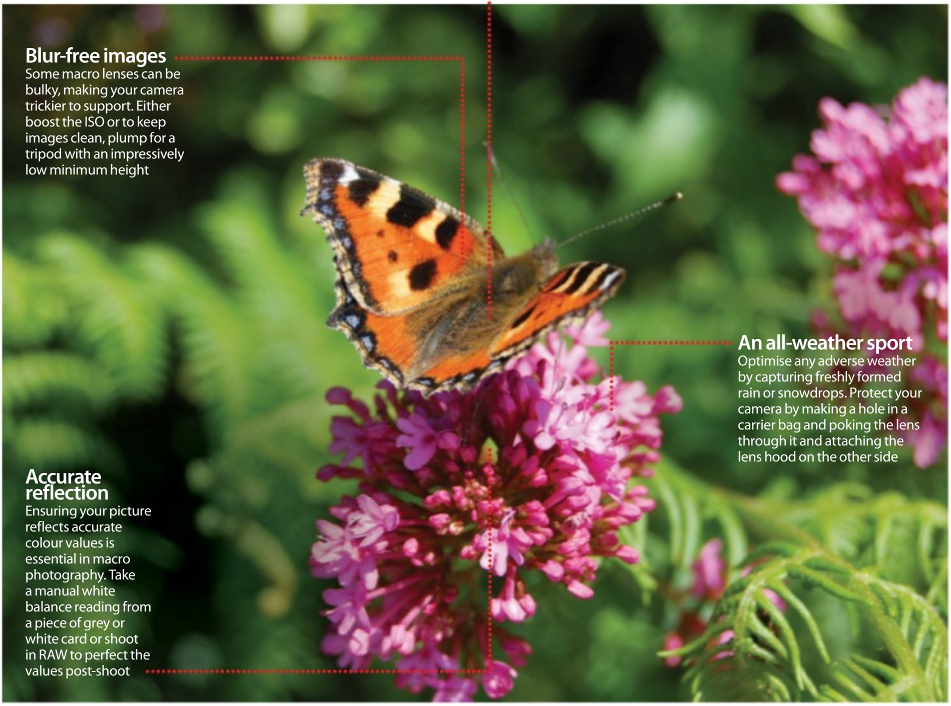
### EF-M 18-55mm f/3.5-5.6 IS STM

Expanding its EOS M lens range, the EF-M 18-55mm is the perfect fit for travellers using Canon's CSC out and about. The lens is ideal for covering a range of travel photographic remits including landscape, architecture, food, portraiture and street. It provides a fast auto focus for enthusiasts and a full-time manual override for those with slightly more confidence.

**Price** £269/$299.99

**Web** www.canon.co.uk

# Macro



**Textures, patterns and details**
Photographing natural and man-made textures, patterns and details is what lies at the heart of macro shooting. Use a wide aperture to capitalise on these moments from as low as f1.2 through to f4.5

**Blur-free images**
Some macro lenses can be bulky, making your camera trickier to support. Either boost the ISO or to keep images clean, plump for a tripod with an impressively low minimum height

**An all-weather sport**
Optimise any adverse weather by capturing freshly formed rain or snowdrops. Protect your camera by making a hole in a carrier bag and poking the lens through it and attaching the lens hood on the other side

**Accurate reflection**
Ensuring your picture reflects accurate colour values is essential in macro photography. Take a manual white balance reading from a piece of grey or white card or shoot in RAW to perfect the values post-shoot

## Take a look Capture the tiniest of details using a dedicated macro lens

### EF 100mm f/2.8L Macro IS USM

An oldie but a goodie, this macro prime lens was the first Canon lens to feature Hybrid IS. Five years later and it has proven itself as a popular choice amongst macro enthusiasts, particularly because of the integrated image stabilisation that enables photographers to get up close and personal without a tripod, but also because it offers a super-wide aperture of f/2.8.

| | |
|---|---|
| **Price** | £1,059.99/$1,049 |
| **Web** | www.canon.co.uk |

### EF 50mm f/2.5 Compact Macro

This little, light and compact macro prime lens offers photographers a standard 46 degree angle of view, a 23cm closest focusing distance and a thoroughly decent 1:2 life-size image reproduction. But that isn't all; the Canon EF 50mm lens features six diaphragm blades and Super Spectra coating to reduce ghosting and flare.

| | |
|---|---|
| **Price** | £250/$299.99 |
| **Web** | www.canon.co.uk |

### EF-S 60mm f2.8 Macro USM

The superior EF-S 60mm f2.8 Macro USM macro lens features a floating optical system that provides macro enthusiasts with the dream of life-size magnification (1:1). As well as being useful for macro images, the lens doubles as a creative portrait lens also. Its near-silent USM means that any skittish wildlife subjects are unlikely to be disturbed.

| | |
|---|---|
| **Price** | £540/$469.99 |
| **Web** | www.canon.co.uk |

# Sports/Action

**Short, sharp shots**
There's no getting past it, for natural-looking sharp action shots you need a fast shutter speed. Raising the ISO helps you take that speed to the next level

**Telephoto primes**
Prime lenses (those with a fixed-focal length) offer enhanced quality and a faster maximum aperture. Use this type of telephoto lens when the action is carried out at a fixed distance

**Heavy equipment = sturdy tripod**
Telephoto lenses are bulkier and heavier than other lenses, which means if you plan on shooting for a while, a tripod will help you avoid image blur and give your arm a rest

**Telephoto zoom lenses**
Telephoto zoom lenses are the more practical choice for shooting sports, particularly where those involved are constantly moving in different directions during the event

## Take a look The perfect lenses for freezing the action and getting that shot

### EF-S 55-250mm f/4-5.6 IS STM

A compact, lightweight, yet massively versatile telephoto zoom lens, the EF-S 55-250mm is perfect for getting close to subjects. Ideal for sports, action, wildlife or street, this lens is the first EF-S telephoto zoom to use Canon's advanced STM technology, which alongside a 3.5-stop optical image stabilizer, helps to create some of the sharpest sport shots possible.

| | |
|---|---|
| **Price** | £350/$300 |
| **Web** | www.canon.co.uk |

### EF 200-400mm f/4L IS USM

The ideal lens for serious sports and wildlife photographers, this is a super-telephoto lens that means business. It features a fixed f/4 aperture, 4-stop optical image stabilizer and for the first time a built-in 1.4x extender. Photographers will also look the part as the product sports a high-end magnesium alloy design for style and robustness substance.

| | |
|---|---|
| **Price** | £12,000/$11,799 |
| **Web** | www.canon.co.uk |

### EF 70-300mm f/4-5.6L IS USM

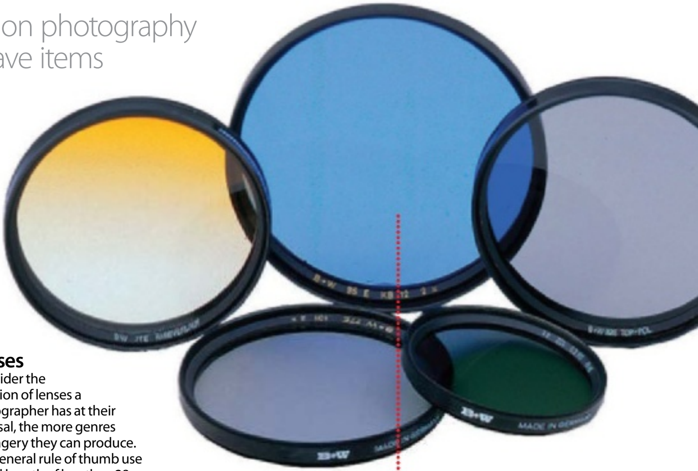
The EF 70-300mm was introduced by Canon as a lightweight, compact but professional telephoto zoom lens, designed to answer the growing demand for high-performance zoom lenses which feature outstanding mobility and versatility. Its travel-friendly size also makes this a feasible candidate for those a penchant for travel photography.

| | |
|---|---|
| **Price** | £1,599.99/$1,599 |
| **Web** | www.canon.co.uk |

# Essential kit

Improve and expand your Canon photography experience with these must-have items

**Lenses**
The wider the selection of lenses a photographer has at their disposal, the more genres of imagery they can produce. As a general rule of thumb use a focal length of less than 28mm for landscapes, 35 to 85mm for portraits, and anything over 100mm for zooming into the action such as sports, wildlife or documentary



**Filters**
A UV or skylight filter acts as a simple protective piece of transparent glass that safeguards your lens against smears, knocks and smashes. It is widely considered essential, particularly if the lens is expensive. An ND grad is used in landscapes and can help to 'trick' the camera's image sensor when you want to manipulate exposures. A polariser filter can minimise glare caused by reflections, boost colours and heighten contrast

**Camera bag**
With so much kit to carry it's wise to invest in a rugged camera bag. The best bags feature removable padded separators for protecting your equipment; they can be pulled out and reattached by their Velcro strips to suit the style and shape or your own equipment. Also look for one that is waterproof, lightweight, has plenty of smaller pockets and a strap for attaching your tripod to

**Tripod**
A tripod is essential when you want to use a long exposure or focal length and don't want to risk the camera moving; which would result in camera shake or image blur. This is particularly important for night or low-light photography. Enhance the chances of success by firing the shot with a timer

### Lens pen or cloth

Lens spots and dust motes are an expected annoyance when using lenses on a regular basis. Trust in a reliable make of lens cloth or pen to wipe away marks and stains before you begin capturing your subject. This will save you hours upon hours of time later on, cloning and removing the blemishes in an editing suite

LENS CLEANER
LENSPEN
ORIGINAL
SIGMA

### Memory card

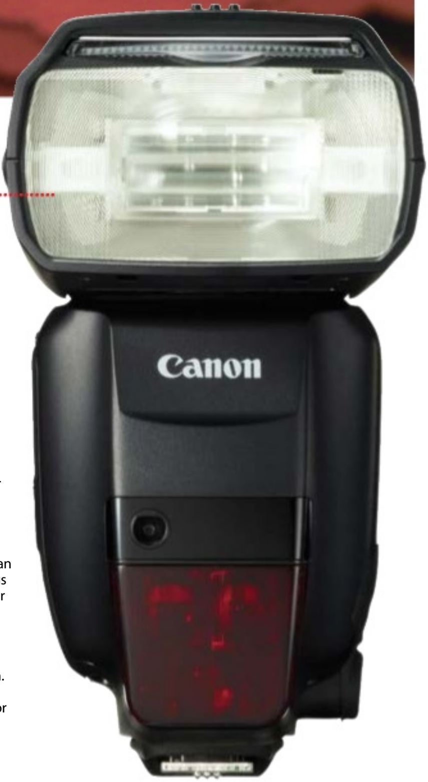
Unless your camera has a particularly large internal memory you'll need a memory card to record your images on. The most common formats used today are SD/SDHC and SDXC. Opt for several smaller cards (4-16GB) rather than one large card (32GB) in case that card is lost, stolen or damaged

2GB
Kingston TECHNOLOGY
SD
SD/2GB

### Remote control

If you enjoy shooting landscapes, seascapes or nightscapes you may want to invest in a remote control. These type of shots call for longer exposures and as such any movement the camera and tripod experience will be captured in your shot. Using the camera's self-timer or even better; a tethered or wireless remote control will eradicate this

RUNNING LOCK
Canon
RS60-E3



### Flash

A portable flash is a wise investment for anyone shooting above a beginner level. This type of flash grants the photographer more creativity because portrait, fashion, event and wedding photographers can bounce the flash off ceilings and walls to generate softer more flattering effects to illuminate the subjects, which are much more natural than those of the camera's own pop-up flash. Flash is also useful when it comes to shooting action or sports photography

# Cleaning your Canon

If you want to keep your Canon camera in pristine condition and working at its best, you need to learn how to clean it

Giving your Canon a good clean will help to prolong its life and ensure it is performing to its best ability. Marks on the lens can show up in your shots and general dirt on the camera body can find its way into the inner workings, so it is in your best interest to keep it spotless. The outer body of your camera is easy to clean yourself at home, but when it comes to cleaning the very delicate sensor, it is best to send it away to be dealt with professionally. Here's how we recommend you go about it…

CleanSea
Canon
CANON ZOOM LENS EF-S 18-55mm 1:3.5-5.6 IS

**1 Blow away dust** First, use a rocket blower to blow away any loose dust and dirt on your camera body and lens. Simply squeeze the device to create a puff of air.

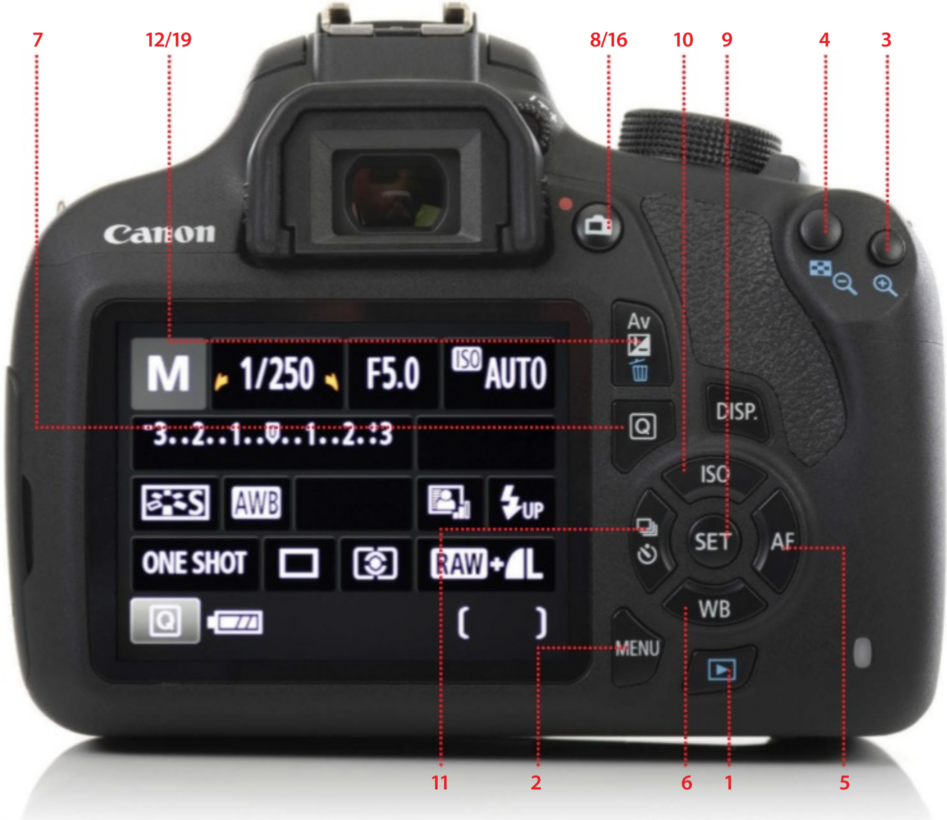
**2 Apply cleaning solution** An alcohol-based lens cleaning fluid will help you remove any stubborn marks and smudges on your lens. Apply to the lens and wipe with a microfibre cloth.

**3 Use a microfibre cloth** A microfibre cloth is the best option for lens cleaning as it will really lift away any dirt. Just make sure you wash your cloth regularly to keep it as clean as possible.

# The Canon buttons

Get to know your way around your Canon camera by learning what all those buttons do and how to identify them easily

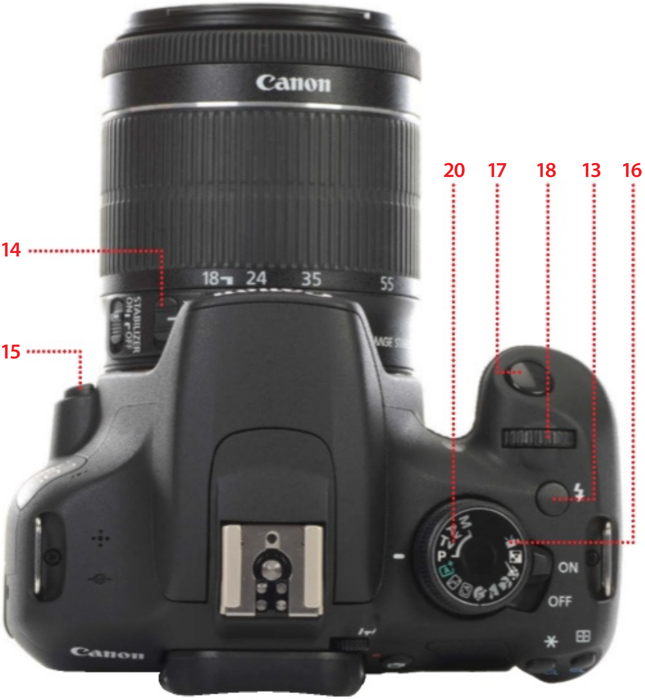
When you first get your Canon camera, or even when you've had it for quite some time, you might not know what all of those fiddly buttons do. What are their functions? This guide aims to inform you about what all of them do. You'll be an expert in no time!


7
12/19
8/16
10
9
4
3
Canon
M
1/250
F5.0
ISO AUTO
AWB
ONE SHOT
RAW+L
Av
DISP.
ISO
SET
AF
WB
MENU
11
2
6
1
5

**1 Playback** The Playback button will bring up all the stills and video footage recorded on the memory card or internal memory.

**2 Menu** In order to adjust the majority of settings you'll need to press this Menu button to find the option you want to change.

**3 Playback zoom** Sometimes you need to examine an image closely. To scroll in to your captured images for a closer inspection, use this button.



**4 Zoom out** This button lets you zoom out on images when in playback mode. Keep going and it will let you see all your images as thumbnails.

**5 Focus modes** Use the AF button to set the focus mode you wish to use, from single shot to continuous focusing (called AI Servo).

**6 White balance** The WB button gives you access to white balance settings. Change these according to the kind of light you're shooting under.

**7 Quick menu** Here you can access some of the most-used settings quickly and easily, rather than having to delve through the larger menu system.

**8 Live View** Instead of composing through the viewfinder, you can use the LCD screen instead (Live View). This is ideal when recording movies.

**9 SET** When you want to change a setting or action a command you'll use the SET button in order to confirm the instruction.

**10 ISO** Use this button to set the ISO – this controls how sensitive the sensor is to light. The higher the number, the brighter the shot will be.

**11 Burst mode/self-timer** Photographers can make use of these controls to alter how many shots are fired in one go, or to utilise the camera's self-timer.

**12 Delete** When you're reviewing images in Playback mode, use this delete button to erase unwanted or imperfect captures.

**13 Pop-up flash** This lightning bolt icon symbolises the pop-up flash. Simply hit it when a bit of extra illumination is required.

**14 Manual/Autofocus switch** To control the focus yourself push this switch to M for manual, otherwise let the camera do the work with Autofocus.

**15 Lens release** Hold down this button and gently pull away the lens to remove it. Change lenses quickly to avoid dust and debris collecting on the sensor.

**16 Movie record** Shown as a small red dot, the shortcut movie record button fast tracks movie-makers into the dedicated recording mode.

**17 Shutter button** The most important and probably obvious button on the camera. It's the shutter button which you press to fire the shot.

**18 Command dial** The command dial is used to affect settings. It can slow down shutter speed or change aperture when the AV button is held.

**19 Exposure compensation** This lets you override the suggested settings, allowing you to quickly underexpose or overexpose.

**20 Mode dial** The palette of modes gifts photographers with the manual and semi manual options as well as commonly-used scene modes and auto.

# The Canon menus

Discover all there is to know about Canon's menu system

Granted, Canon's camera menu system doesn't sound like the most glamorous or scintillating facet of the device, but in actual fact understanding how to use it, and how to use it well, can really enhance your photography.

By exploring, learning and changing the menu options, photographers have the ability to take control away from the camera and hand themselves the reigns to execute stronger, more dynamic and interesting imagery. What's more, photographers who understand how to manipulate the in-camera system will be in a better place to challenge themselves in tricky lighting conditions or in more complex shooting situations. So are you ready to learn more? Let's get started…

Image quality
Beep Disable
Release shutter without card
Image review Off
Peripheral illumin. correct.
Red-eye reduc. Disable
Flash control
Canon
ISO
FUNC SET
DISP.
MENU

## Shooting menus

Most menus on Canon cameras are split up into shooting, playback and settings tabs. The shooting menus are red and they house all of your key settings to tweak to get your image just how you want it. In here you will find things like the image quality (where you can change from JPEG to RAW, or low quality to high quality), exposure compensation for making the shot lighter or darker, your metering mode, custom white balance, bracketing and more. This is the powerhouse section.

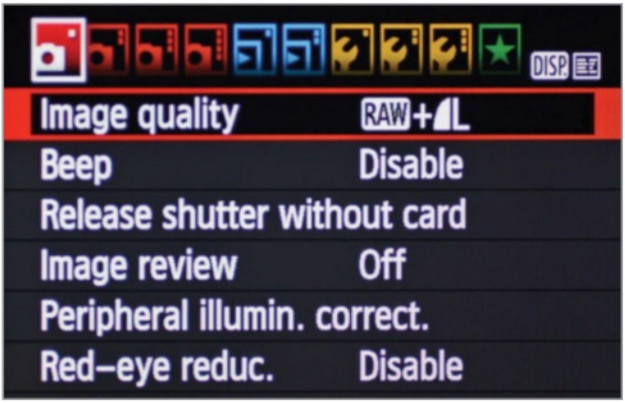
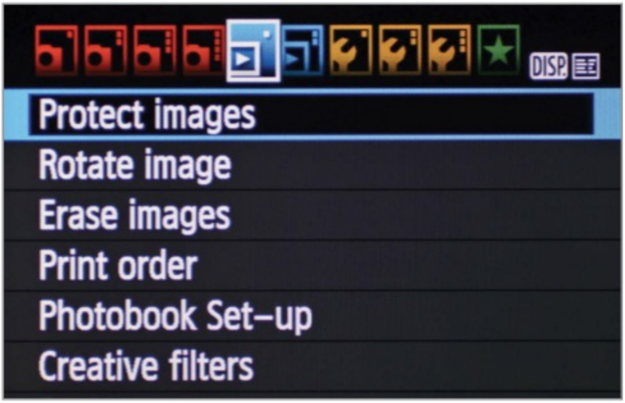


Image quality RAW+L
Beep Disable
Release shutter without card
Image review Off
Peripheral illumin. correct.
Red–eye reduc. Disable

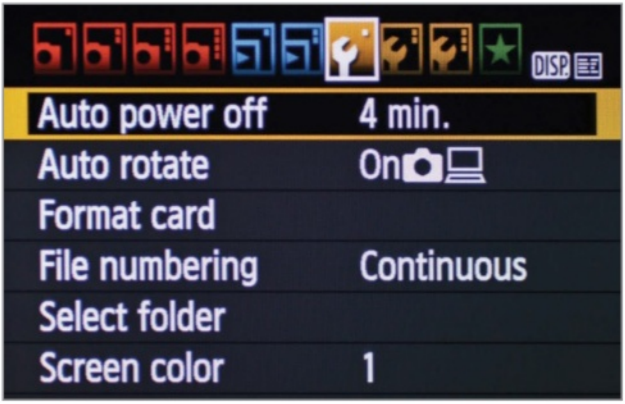
## Playback menus

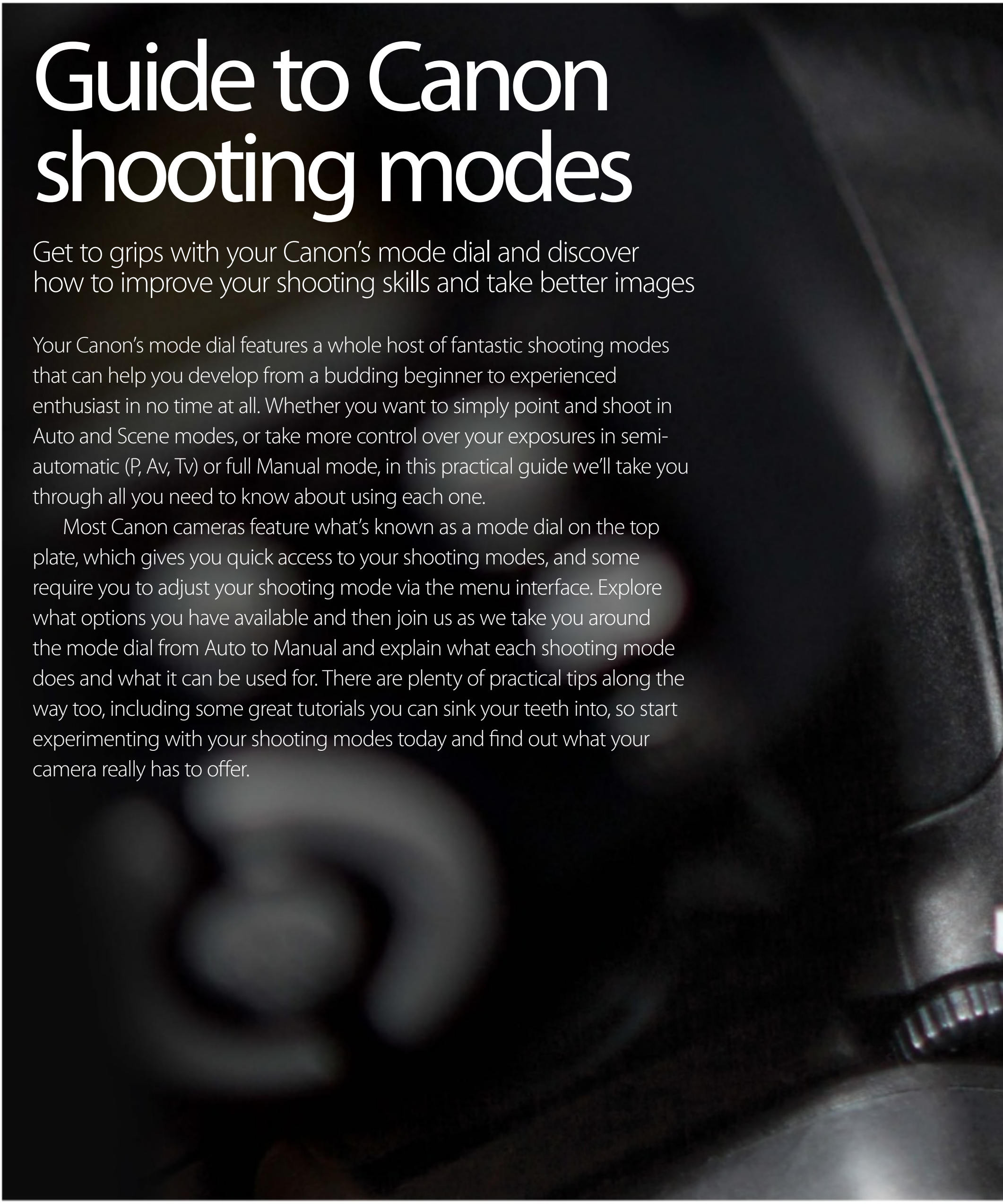
In the blue playback menus you will find settings you can choose that effect your image when in playback mode. Here you can protect certain shots so they won't accidentally get deleted, you can erase unwanted images and control the histogram (which is a handy graph that documents the tones in your capture). Some cameras will also let you do things such as create a slideshow of shots on the LCD of your camera, add creative filters after you've taken the photograph and more.



## Settings menu

The yellow settings menu with the spanner icon is, in truth, where all the boring stuff lives. Even so, it's a vital area to get to grips with. Here you will find options such as the LCD brightness and the date and time. It's also where you can tell your camera to clean the sensor and format the memory card. When using the memory card with a new camera, it's important to format it to make it work well with the hardware. It will erase everything, though, so make sure you've backed everything up first.


Auto power off 4 min.
Auto rotate On 📷 💻
Format card
File numbering Continuous
Select folder
Screen color 1



# Guide to Canon shooting modes

Get to grips with your Canon's mode dial and discover how to improve your shooting skills and take better images

Your Canon's mode dial features a whole host of fantastic shooting modes that can help you develop from a budding beginner to experienced enthusiast in no time at all. Whether you want to simply point and shoot in Auto and Scene modes, or take more control over your exposures in semi-automatic (P, Av, Tv) or full Manual mode, in this practical guide we'll take you through all you need to know about using each one.

Most Canon cameras feature what's known as a mode dial on the top plate, which gives you quick access to your shooting modes, and some require you to adjust your shooting mode via the menu interface. Explore what options you have available and then join us as we take you around the mode dial from Auto to Manual and explain what each shooting mode does and what it can be used for. There are plenty of practical tips along the way too, including some great tutorials you can sink your teeth into, so start experimenting with your shooting modes today and find out what your camera really has to offer.

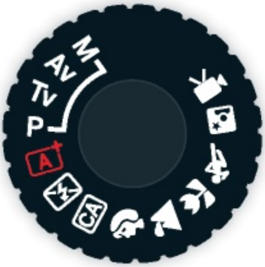
ISO
DISP.
A-DEP
M
Av
Tv
P
ON
OFF

# Auto mode

## Discover more about your Canon's beginner-friendly Auto mode

Auto mode is known for being a straightforward, no-fuss point and shoot setting. It's also easy to identify on your Canon's mode dial and features within almost all of its camera models, only with the exception of professional-level DSLRs. Beginners who are keen to get stuck into their photography can sometimes overlook this powerful setting and head straight for the scene modes or semi-automatic (P, Av, Tv) settings. However, Auto is a great place to start developing your skills, and in fact as a shooting mode it has the capacity to capture some really great images indoors and out.

As a setting, Auto mode is designed to essentially take care of the exposure for you, which means you won't have to learn the ins and outs of how aperture and shutter speed work together right away.



▲ **Go Auto** Switch to Auto mode to capture quick shots on the go without having to master your camera manual

If your Canon offers Live View select it in Auto and use the on-screen grid to compose better images.

It also determines the best focus, white balance and ISO settings for the scene for you. Newer camera models, however, can offer slightly more advanced Auto modes that are able to detect the type of scene you're shooting in order to determine the best settings for the shot. Most also enable you to turn the flash off, which is handy if you're shooting low-light landscapes, and some even give you the option to select continuous or burst mode so that you can capture a series of action shots quickly.

Although on the surface Auto may seem a little limiting in terms of creative control, there are benefits to letting the camera take care of all the settings for you, as it means you can focus on developing basic skills in other important areas of photography first, such as mastering composition.

Composition is a key element in any great image and being able to recognise what would work well as photograph can take some practise. Use your camera's Auto mode as you advance your skills in this area and turn to page 60 to find out more about composition.

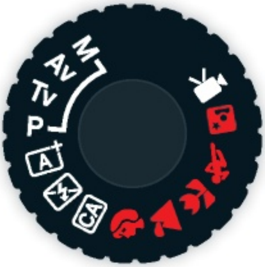
▲ **No-fuss results** Although a simple point and shoot mode, Auto is still capable of capturing great, even exposures without you having to fuss over settings

▼ **Go further** Explore your camera's semi-automatic modes for more creative control over the outcome of your images

◀ **Great results instantly** Auto is great for straightforward shots and particularly useful if you want to simply point and shoot

# Scene modes

Switch your Canon to scene modes and capture impressive images of specific subjects



▼ **The right mode for the job** Most cameras offer a selection of scene modes to suit almost all photographic subjects

Scene modes are a lot like your Canon's Auto mode in that they take care of exposure settings so you can focus solely on framing the shot. Most cameras offer an array of scene modes, with some of the most common being, portrait, landscape, close-up and action.

Unlike your Auto mode, however, scene modes are considered slightly more advanced, and are designed to shoot using the best combination of settings for your chosen subject. For example, by selecting the Portrait scene mode, which is represented by a face icon, the camera will automatically set a wider aperture (large f-number between f2-f5.6) in order to increase depth of field so that the background softly blurs out, making your model the main focus point. Other scene modes make similar adjustments in order to

▲ **The best options** Scene modes are fantastic for specific subjects as they select the best settings for the scene

optimise images, including increasing colour vibrancy and contrast for Landscapes and setting faster shutter speeds for capturing action in the Sports mode.

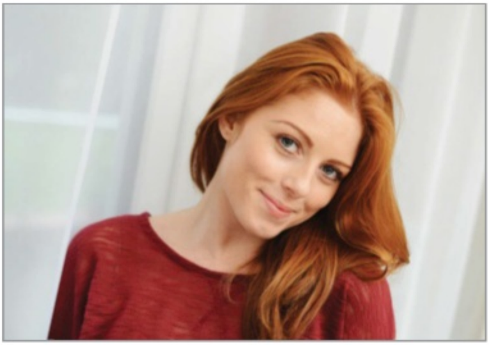
The amount of scene modes you have depends on your camera type; however, most cover all of the main photographic genres. Selecting a scene mode is quick and easy; simply rotate the mode dial to the icon that best represents the scene or subject you're shooting. You can even control the use of on-camera flash with most scene modes and can select burst mode for continuous capture. Some even enable you change your white balance setting so you ensure your shots are free from colour casts.

Scene modes are a fantastic starting point for those who want to step up from Auto. However, you may find at times you don't get the exact results you were after, which is a great sign that you're ready to rotate the mode dial round to more advanced settings that can give you much more creative control over your captures.

> "Scene modes are designed to shoot using the best combination of settings for your chosen subject."

▲ **Pick the scene** Scene modes appear as illustrated icons. Select one that best represents your scene or subject

## Portrait mode



Use the Portrait mode to take picture-perfect shots of yourself, a family member or even a group shot of friends. The Portrait scene mode will automatically set a wider aperture so the background will appear slightly blurred, which is a great way to isolate your subject and ensure they're the focus point. This also means you'll get professional-quality portraits without having to master aperture settings. Some portrait scene modes even automatically enhance the shots for you by smoothing skin.

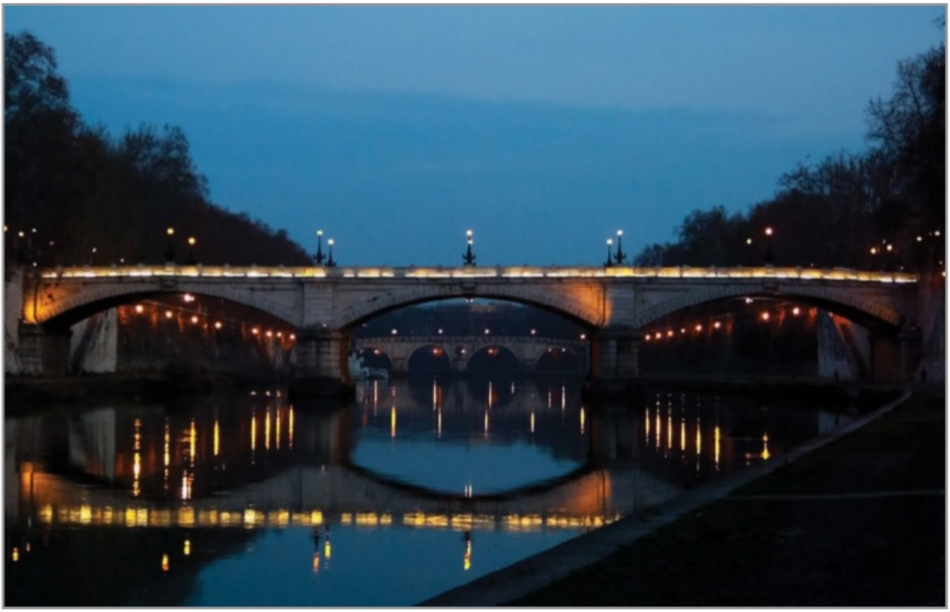
## Landscape mode

Switch to the Landscape scene mode, represented as mountains, if you want to capture vibrant vistas. Landscape scene mode is designed to enhance contrast and bring out the blue and green colour tones. It will also set a narrow aperture to increase depth of field so that more of your photo appears in focus. Some newer Canon cameras even offer a dedicated panorama mode, enabling you to shoot a sweeping landscape vista, which the camera then automatically stitches together.

## Close-up mode

If you want to capture incredible close-ups, select the flower icon. Using this setting, your camera will let you focus much closer to your subject than it would in regular Auto mode, which means you can capture more intricate and abstract details. It's great for photographing flowers, insects, food and many other interesting items. Close-up mode also sets wider apertures (large f-number) to isolate your focus point within the image, which means distracting and busy backgrounds are softly blurred out.

## Night mode



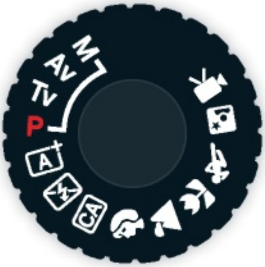
The Night mode is ideal when you're faced with shooting in low-light situations. It automatically selects the best combination of aperture, shutter speed and ISO, in order to increase the camera's sensitivity to light. Some Canons may even offer two Night modes; one for portraits and another for landscapes. This is due to the camera favouring flash for low-light portraits and slower shutter speeds for landscapes, which is a result of the on-camera flash not being powerful enough to illuminate an entire scene.

## Sport mode

If you're struggling to capture sharp shots of moving subjects, select the Sport scene mode, which appears as a running man icon on the mode dial. In this mode, your camera will prioritise fast shutter speeds, which means you won't miss capturing a moment of the action. For particularly fast-moving subjects, use the Sport mode in conjunction with your camera's burst or continuous drive mode setting so that you can capture multiple shots at speed and then pick the best of the bunch.

# Program mode

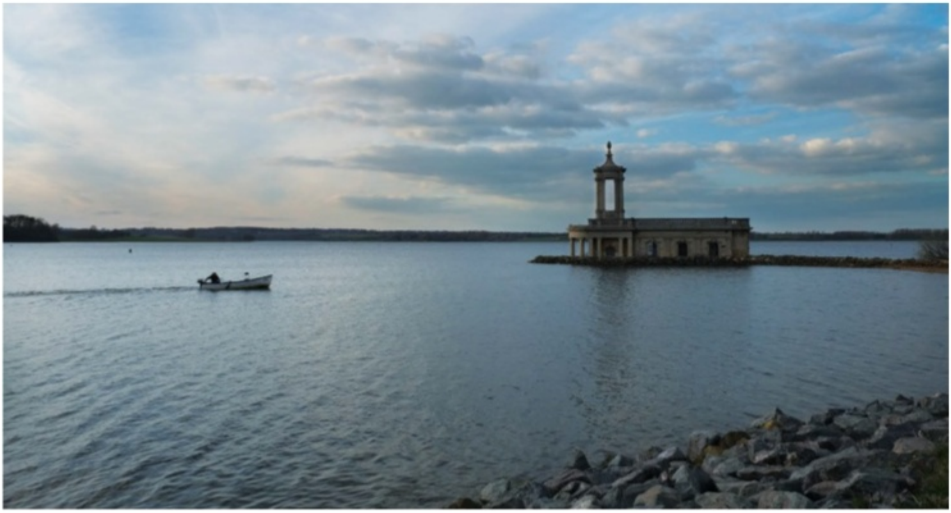
## Take more control over your images using your Canon's semi-automatic Program mode



Program mode (P) appears alongside other semi-automatic modes (Av, Tv) and full manual control (M) on the Canon mode dial. It may seem much more advanced, and to an extent it is, but it's still a straightforward shooting mode, even for beginners. In fact, it's a great starting point for those keen to learn more about their exposure settings without making mistakes and missing a shot.

On the surface Program mode is a lot like your camera's Auto setting as it calculates the best shutter speed and aperture setting. Unlike Auto however, Program can be much more flexible as it also enables you to adjust other settings, which can each have a creative impact on your images, such as metering modes, flash, ISO, white balance, focusing modes and even exposure compensation. Each

▼ **Get more from your shots** Select Program mode to get a little more creative in-camera using aperture and shutter speeds without ruining your shots



of these can affect the combination of aperture and shutter speed your camera decides to select, which means you're able to take much more control over the outcome of your images.

You can take things a step further too, as Program mode enables you to shift and override the combination of settings that the camera chooses. This means that if the camera has decided to set a narrow aperture for example, but you would like to shoot with a wider aperture, you can adjust the aperture and the shutter speed will automatically align itself with your chosen setting. This works in the same way with shutter speed.

Program mode is a safe setting to learn more about the relationship between shutter speeds and aperture, as you'll be able to see exactly what combinations the camera favours when adjusting one setting over the other. This is a great guideline for when you're ready to start experimenting in the more advanced modes later on.

> "Program mode is a safe setting to learn more about the relationships between shutter speeds and aperture."

▲ **Exposure** Program mode is a safe setting to learn about exposure as it will select the best exposure settings based on the scene and camera lens you're using

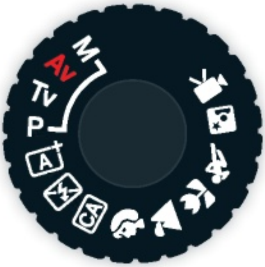
▲ **Keep a tripod to hand** Program mode will always assume you're shooting handheld; if your camera selects a shutter speed slower than 1/80sec use a tripod or adjust the shutter speed so that the camera will amend the aperture

# Aperture Value mode

Take control of exposure and discover more about depth of field with Canon's Aperture Value mode

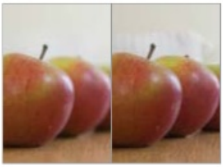
Control the creative outcome of your images by selecting the Aperture Value mode (more widely known as Aperture Priority), represented by an Av symbol. Aperture Value is a semi-automatic mode as it enables you to set your own aperture setting whilst the camera determines the best shutter speed based on your selection and the scene you're shooting. It's ideal if you're keen to experiment with depth of field and is commonly used for portraits and macro.

To get a shallow depth of field, which essentially blurs the background of your image, you can select a wide aperture setting



▲ **Concentrate on one thing** Aperture Value enables you to select your desired aperture settings whilst the camera controls shutter speed

▶ **Soft and bright** Aperture Value mode is great if you're shooting subjects up close, portraits or in low-light conditions as it softens the background and brightens the exposure



> Use wide apertures for shallow depth of field, and narrow apertures to increase depth of field.

(f1.4-f5.6). Provided you focus your camera on the subject in the foreground correctly, they should appear sharp while the rest of the image blurs out. Wide apertures make the opening inside the lens much larger which means more light is let in; the camera will counter this by selecting a faster shutter so that your image won't be overexposed. Selecting a narrow aperture, however (f8-22) increases depth of field, which means more of the image will appear sharp and in focus. This is why narrow apertures are selected for landscape photography. Of course, narrow apertures shrink the size of the opening inside the lens so less light is let in. To avoid underexposing images the camera will set a slower shutter speed. You'll need to be particularly mindful of this if you're shooting indoors or when light is low, as a slower shutter speed will make your shots more susceptible to camera shake or blur.

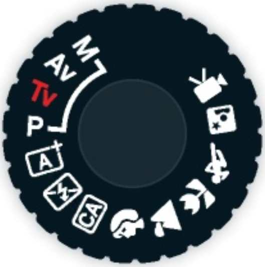
## Take stunning portraits

**1 Select Aperture Value** Set the mode dial to Av and using the scroll wheel, set aperture to f4 for background blur.

**2 Set your focus mode** Stick to autofocus and select the One Shot AF mode. Position the focus point over the face.

**3 Frame and shoot** Compose your image and half depress the shutter button to focus. Use a reflector to bounce light.

**4 Picture-perfect portraits** The wide aperture ensures the model's face appears sharp, with a blurred background.



# Time Value mode

Learn how Time Value mode can control movement in your shots for better effects

Time Value mode (more widely known as Shutter Priority) gives you the control your Auto and Sport scene mode can't. It follows the same principle as Aperture Value and is marked as Tv on the mode dial. Select Time Value mode in order to control how fast or slow your shutter opens and closes. Your camera will then calculate the best aperture setting based on your selection.

Time Value gives you freedom to capture more noticeably creative images in camera and is most commonly used when photographing fast-moving subjects or scenes that require long

▶ **Experimental shots** Position your camera on a tripod and experiment with slow shutter speed settings for stunning effects in camera

▼ **Sharp shooter** Switch to Time Value mode for more creative shots of movement or sharper shots of action

exposures. Inputting faster shutter speeds (1/250 and above) is great for capturing high-energy action shots of sport, and because you're able to determine the exact speed of your shutter in this mode, you can also shoot sharp images of children at play, pets and wildlife.

Slower shutter speeds are used for capturing creative long exposure effects. Bear in mind, however, that steadying your camera on a tripod is essential if you're shooting with shutter speeds slower than 1/80sec handheld, otherwise your images will noticeably suffer from camera shake. Use long exposures to photograph stationary subjects in low light such as indoor still life or landscapes at sunrise or sunset. You can even use slow shutter speeds to create a sense of motion in your shots. This is ideal for blurring moving water in a seascape or waterfall image. Panning is another great long-exposure technique that enables you to incorporate motion into your shots. With the right settings, you'll be able to ensure your subject appears sharp in motion whilst the slow shutter blurs the background; we'll show you how in our step-by-step.

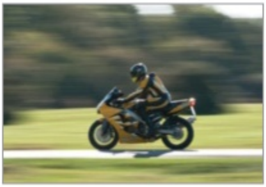
Set your shutter speed to a value that matches your focal length to avoid camera shake.

## Master panning

**1 Select Time Value** Pick Tv on the mode dial and set a slow shutter speed of around 1/60sec or slower.

**2 Set your focus** Focus on a point that is roughly the same distance away as your moving subject and switch to manual.

**3 Steady your camera** Use a monopod for support. When your subject comes into view, press the shutter button.



**4 Impressive panning shots** By moving the camera whilst the shutter is open, you can capture a shot that shows speed.

**▲ Exposure control** Switch to M on your mode dial and select your own exposure settings for the shot

**▶ Total freedom** Manual mode gives you complete control, which means you can use it to photograph any subject or scene

# Manual mode

## Discover how Manual mode gives you complete creative control over your Canon exposures

Of all the modes available, Manual mode (M) is by far the most advanced. This setting quite simply, gives you complete control over your exposures, which means you can adjust settings such as white balance, metering and focusing alongside your ISO, shutter speed and aperture. Unlike Aperture Value and Time Value mode, where the camera helps to balance an exposure based on the setting you've selected, in Manual the stabilisers are off and all the decisions regarding exposure are up to you.

Manual is a great mode for experimenting but avoid rushing into using this setting if you simply want to grab a quick shot. To get great results in Manual mode, you need to have a clear understanding of how exposure works, which is something

Adjust the shutter speed by rotating the scroll wheel and the aperture via the front wheel.

you can start to pick up on using the more supportive Program, Aperture Value and Time Value modes first. When using these semi-automatic settings, pay attention to how the camera assists your exposure and apply similar principles when you're ready to explore full Manual mode. Although mastering Manual mode can be a trial and error process, taking some time to really experiment with it, even as a beginner, is definitely worthwhile.

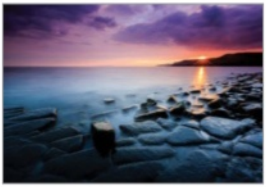
With plenty of practise however, you'll soon start to feel confident in Manual mode, which is when it's really worth experimenting with different combinations of aperture and shutter speed. Help is at hand too, as all cameras come with a light meter, which you can preview inside the viewfinder or on your LCD screen when using Live View to shoot. The light meter will give you a good indication as to whether your image will be under- or overexposed based on the settings you've selected. The marker should appear central at 0 for an evenly exposed image; if it sits to the right your image may be underexposed or overexposed if it's to the left.

## Shoot stunning sunsets

1 **Switch to Manual mode** Rotate to M and select self-timer or remote shutter release to reduce camera shake.

2 **Adjust your settings** Set a narrow aperture for a sharp result and a slow shutter speed to avoid an underexposed shot.

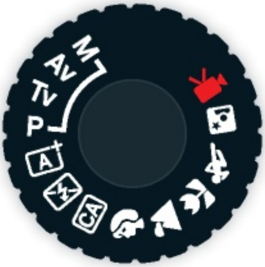
3 **Compose the scene** Use Live View and focus a third of the way into the frame. Release the shutter to activate the timer.



4 **The result** The slow shutter speed caught the moving water as mist and the narrow aperture means it is all sharp.

# Video mode

## Capture high-quality video with your camera using Canon's dedicated Video mode



▶ **Pick and choose** Most Canon cameras combine still capture with video these days, so you can seamlessly switch between shooting either format

▼ **Still from moving** You can grab high-quality stills from HD video footage, which is great if you want a single photographic frame of the action

Video began to be introduced on DSLRs a few years ago and now it's become a sought-after option when people are buying new kit. Due to its success, Video mode is now considered a staple feature in most cameras, including compacts. Being able to access stills and video capture in one camera means it's even easier to record precious family moments on the go.

If your Canon camera offers Video mode, it may appear on the mode dial as a video camera icon or could be accessed via a switch that turns the camera from still to video on the back of the camera. On some models you may even have to select it via the menu interface. Check your Canon manual to see if Video mode is available on your camera.

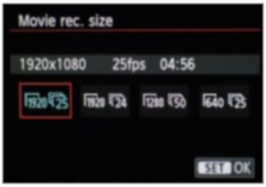
Once you've selected Video mode, switch to Live View in order to compose and record footage easily on the camera's back LCD screen. You'll also need to select the movie quality and frame size prior to recording, which is accessible via the main menu interface. Almost all Canon cameras offer HD video recording at either 720p or full 1080p, alongside smaller frame sizes, which can be useful if you want to upload video online without having to edit it first.

Some Canon cameras that offer Video mode come with built-in microphones but you can purchase an external mic for some Canon models that enables you to record better quality sound. Alternatively, switch sound off altogether and shoot a silent movie.

As you're recording you can also take full control over your camera settings, which is great if you want to adjust depth of field using aperture or introduce creative colour casts with white balance. You can also choose to focus manually or use select autofocus modes, which include a tracking feature that ensures moving subjects remain sharp in your video.

Experiment with your white balance setting if you want to illustrate a mood in your movies.

## Activate Video mode



Movie rec. size

1920x1080 25fps 04:56

**1 Select the size** Select the Movie icon on the mode dial then go to Movie Rec Size in the menu and select 1920x1080.

**2 Input your settings** Within the menu, set the Movie exposure to manual, to allow for more creative movie effects.

**3 Pick your settings** Input your shutter speed and aperture settings as well as white balance before you begin recording.

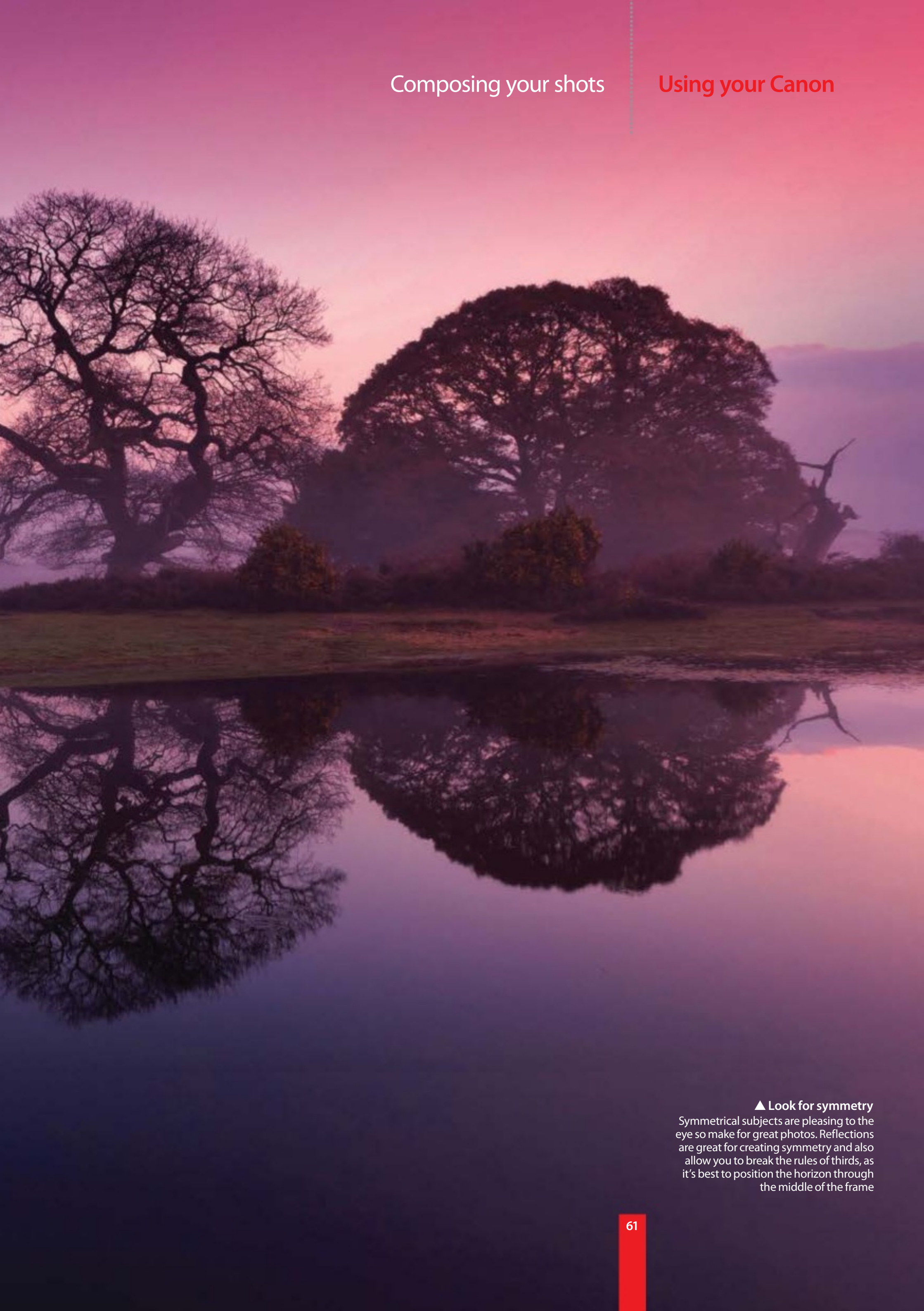
**4 Add light** If light is a little low, attach an LED light source to ensure footage is bright. Press record and press it again to stop.

**Works best with**
**EF 24-70mm f/4L IS USM lens**

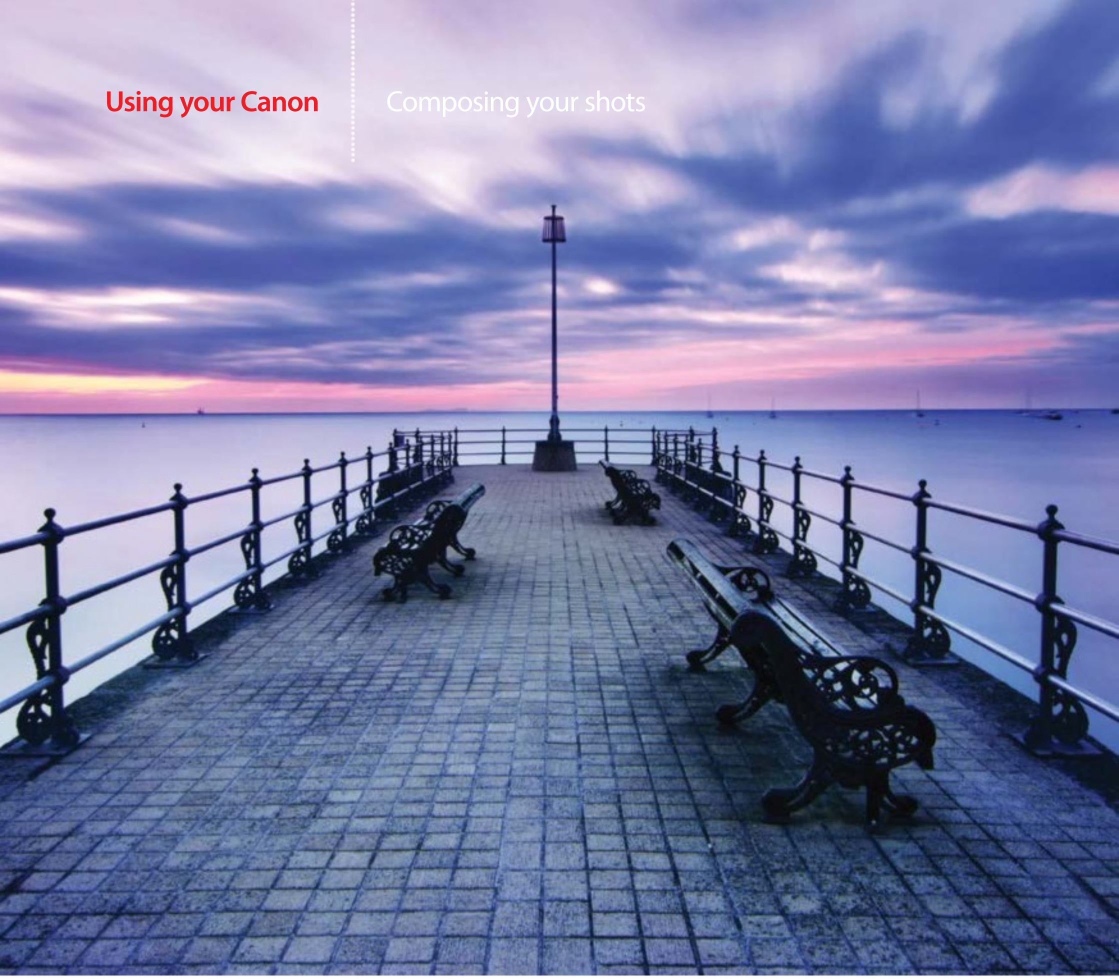
# Composing your shots

Anyone can take an okay shot, but to take a really great picture with your Canon you need to master composition

Composition is one of most basic yet important skills for creating images, and is used by artists and photographers alike. It describes what is included within the frame and where it is positioned, with the aim of creating the most engaging and visually pleasing image possible. How you compose a photo can have a big impact on how it is interpreted, so it is one of the first things you should learn about in photography. In this guide we will take you through some simple tips for creating stunning images every time, no matter which Canon you own.



**▲ Look for symmetry**
Symmetrical subjects are pleasing to the eye so make for great photos. Reflections are great for creating symmetry and also allow you to break the rules of thirds, as it's best to position the horizon through the middle of the frame



▲ **Lead the eye**
Including natural lines in your photos helps to guide the viewer through the shot. Look out for fences, paths and rivers that will direct your viewer's gaze, but make sure that they don't lead them out of the frame

When taking a photo of any scene, it can be tempting to simply point and click so you can move on to the next shot. However, taking your time over an image will allow you to consider more carefully the best way to capture it and how you want others to interpret it. By putting more thought into how you compose your shot, you can convey the message you want and create an image that is more appealing to the eye.

There is no definitive rule for what makes a great photo, however, there are a few tried and tested techniques that will give you a good starting point when composing your photos. The most basic thing to remember is to keep it simple, as an overly-cluttered photo will leave the viewer not knowing where to look first. Ideally, you want to guide their eye through the photo so that they can explore the entire scene in a logical order. One of the best ways to do this is

### ▲ Follow the rules

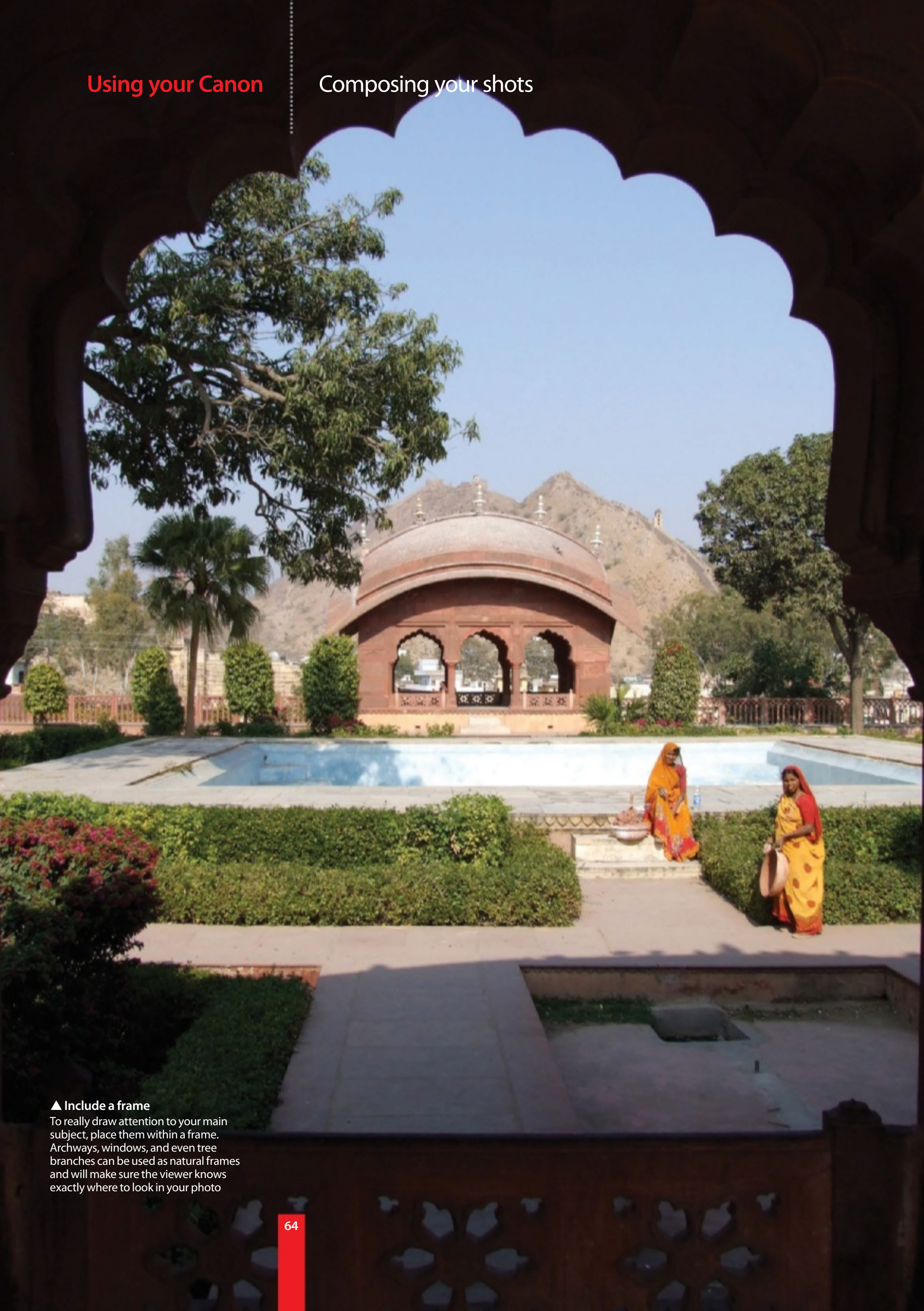
There are some handy rules to help you compose your photos for the most visually pleasing results. For example, the rule of thirds suggests you position the horizon and main focal point a third of the way into the frame

### ◀ Experiment with angles

Once you've taken a shot, try taking it again from a different angle to get a new perspective. Low angles work well for shooting tall buildings as they will make the structure look even more dramatic and imposing

### ▼ Leave some space

With moving subjects, leave active space in front of them to show where they are going. Otherwise you will lead your viewer out of the frame



**▲ Include a frame**
To really draw attention to your main subject, place them within a frame. Archways, windows, and even tree branches can be used as natural frames and will make sure the viewer knows exactly where to look in your photo

with the 'rule of thirds'. This is a technique typically used by painters, but it works for digital photography, too. It involves dividing the scene into a grid with nine equal parts and then positioning the main focal point along one of the lines or intersecting points. The idea is that the image will be more engaging if the main subject is positioned off-centre rather than in the middle of the frame, as this is where the viewer is likely to look first. You could simply imagine a grid over the scene, or see if your camera has a gridline display that you can use instead.

Another great way to guide your viewer through your photo is with lines. This could be a line of trees, a pathway or fence, or even a river or road. Position the line so that it leads towards your main subject rather than out of the frame, as this will keep the viewer engaged with the image. The same can be said for moving subjects or ones that are looking at something; you should have them facing into the shot with some space in front of them so as not to lead the viewer out of the frame.

Of course, all of these 'rules' of composition can be broken if you think a different approach will work better for a particular image. For example, you could choose to centre your main subject to give your shot some symmetry, or get your portrait subject to look away from the lens for a more candid feel to the photo.

> "The image will be more engaging if the main subject is positioned off-centre rather than in the middle of the frame"

▲ **Compose with colour**
Bright colours will add impact to your shots and grab people's attention. To prevent a cluttered photo, try to include no more than three different colour tones in the frame and make sure that all the colours complement each other

## Choose your focal length

Focal length can have a big effect on the look of your photos. A short focal length will allow you to fit more into your photos, creating a sense that you could simply step into the scene. However, this can also cause your images to appear distorted, as short focal lengths tend to exaggerate that which is closest to the lens, and stretch the rest off into the distance. Zoom in to bring everything closer together and create a more natural-looking image.

**▼ Choose the depth of field**
The aperture you are using also affects the focus. If you're using a narrow aperture, the whole scene will be sharp as in this shot. At wide apertures, a smaller portion of the scene will be in focus

# Focusing your Canon

Learn how to keep your shots pin-sharp with the right focus mode, focusing tricks and some clever ways to avoid camera shake

Editing software has come a long way and now boasts some incredible tools to sharpen up soft shots. They can't save one that's simply out of focus, however, so it's vital to learn how to keep it sharp in-camera. The best way to do this is to learn the right mode for the job, as well as utilising tricks like pre-focusing, and selecting your AF point. Read on to explore these methods further but to begin with we'll take you through the very basic method of focusing your camera – just half-press the shutter-release button to focus, then fully press it to take the shot. It's as simple as that!

Works best with
Canon EOS 70D

▼ **Keep it sharp**
At close distances, only a small portion of the shot will be in focus so it's important to be accurate with your technique, and often manual is the best mode for macro. Using a tripod to stop movement back and forth will help too

It's vital to learn the focusing modes. Canon cameras come with the fundamental One-Shot and AI Servo modes. One-Shot AF mode will lock focus when you half depress the shutter-release button. This is useful for static subjects like landscapes and still life. If your subject is moving, switch to AI Servo AF and your camera will track a subject while the shutter-release button is half-way down – it will only lock focus when fully pressed, so is perfect for moving subjects like wildlife and sports. AI Focus AF mode switches between the above two modes, depending on the subject's movement.

Another focusing trick is to choose what part of the frame to focus on by moving the AF point to that area. Of course, the most accurate way is to focus manually, and while this is often the chosen method for macro, you won't be quick enough for action. There is a useful method, though, whereby you choose a spot you know your subject is likely to move into, pre-focus on it, then press the shutter-release button when your subject moves into that spot.

Now you've learnt the vital settings and a few tricks, you're on your way to sharper shots, but don't forget the effect depth of field has on the outcome. Your camera focuses on a single point, but this may have a large area in front and behind it that's sharp, or a small area. At wide apertures this area is very small, so if you want more of your image sharp and in focus, you'll need to use a narrow aperture.

"The One-Shot mode is useful for static subjects like landscapes. If your subject is moving, switch to AI Servo mode"

**▲ Continuous focus**
If your subject is moving, it's important to switch over to the AI Servo AF mode so the camera keeps tracking the subject. Also, use a fast shutter speed to avoid any motion blur appearing in the shot

**◀ Pre-focus shots**
If there's an area you predict your subject will move into, manually pre-focus on this part of the frame and wait for your subject to appear! We focused on this branch, predicting it as an area the bird was likely to land on

## Keep sharp and avoid shake

As well as mastering your focusing technique, you also need to consider camera shake. Small movements in the camera at slower shutter speeds can blur the image, but there are ways around this. Use a tripod or rest on a hard surface and use a self-timer to take the shot to avoid the movement of pressing the shutter release button.

Works best with
**Canon EOS 6D**

**▲ Balanced exposure**
Your Canon's default matrix metering setting will work well when photographing evenly lit scenes, as it wont have to struggle to balance the dark and light areas when working out the best exposure settings

# Metering your shots

Controlling how your camera reads the light will help you take well-exposed photos and uncover new creative techniques. Master the metering options of your Canon for perfect shots every time

Just like our eyes, cameras record the available light in a scene in order to produce an image. However, a camera is not quite as sophisticated as the human eye and can sometimes struggle to record light accurately.

When we view a scene, our eyes automatically balance out the different level of light intensity so that we can see as much detail as possible. Cameras also try to do this, however due to their relatively limited dynamic range, areas of shadow can appear incredibly dark, whilst bright areas can appear excessively light. To avoid this problem, it helps to know how to control your Canon's metering system.

# Metering your shots

**▶ Create a silhouette**
To create a silhouette, use matrix metering and ensure the bright background takes up most of the frame, or switch to spot metering and focus on the bright backdrop

## Keep an image's whites white

When photographing bright white or deep black subjects, your camera's metering system can often struggle, as it will read the reflected light as either being too bright or too dark. This is why snow can often look grey in your shots, because your camera has read it as too bright and underexposed the shot. To fix this, adjust your exposure compensation to balance out your camera's mistake. Set it to +1 or +2 to brighten the shot, and -1 or -2 to darken it.

When it comes to digital photography, there are two main methods for measuring light. The first is using an incidental light meter. This measures the amount of light hitting your subject and then tells you the best camera settings to use for a well-exposed shot. The second is reflected metering, which is the system found within all digital cameras. Reflected metering measures the amount of light reflected off everything in the scene, and then determines the correct exposure. If you're using auto or semi-auto modes, your camera will automatically select the settings. However, in manual mode, it tells you if it thinks your shot will be over or underexposed by way of an exposure dial or preview of the image on the screen.

The default metering setting on most digital cameras is matrix or evaluative metering, which measures the light for the entire scene and balances out the light and dark areas to work out an average exposure. However, you can also switch to one of two other metering options. Centre-weighted metering measures the light for the middle section of the frame, whilst spot metering measures the light for the specific area that you choose to focus on.

**▲ Matrix metering**
Your camera's matrix metering setting will measure the light for the majority of the frame, so if there is lots of contrast between bright and dark areas, it will struggle to know which bit to keep bright

**◀ Spot metering**
Spot metering will read the light for wherever you set your focus point, so is ideal for keeping portrait subjects well-exposed. Simply focus on their face or eye and they should appear bright

**▼ Centre-weighted metering**
If your subject is in the centre of the frame, it is best to use centre-weighted metering. This will ensure that your subject appears well exposed in your photo, even if the light is behind them

**Works best with Canon 1DX**

# Control white balance

## Discover how your Canon's white balance setting affects colour in your captures and learn how to use it

Your white balance setting plays an important role in how your Canon captures colour but seeing as most auto white balance modes are so accurate these days, it is something that is often overlooked. In this guide, we'll explain how white balance really works and point out why it's worth getting out of Auto and exploring what this mode really has to offer.

Here you'll discover more about each white balance setting and find out how it can be used to help record colours accurately in your shots or even add creative effects to your photos.

◀ **Cloudy conditions**
With the correct white balance setting selected you can rest assured that colours will be recorded accurately regardless of the external lighting conditions

▲ **Flash**
Flash emits a much cooler temperature of light, which means images taken with flash can look a little cold. By selecting the flash white balance setting, the camera will help counter this effect by adding some warmth to your shots

White balance is used to help prevent colour casts as it's designed to ensure that white areas appear white. To do this, the camera takes into account the colour temperature of the light you're shooting in.

All light sources emit different colour temperatures. You'll notice this if you've taken a bad shot indoors under incandescent lighting, as the image will appear orange. Most modern cameras offer pretty accurate auto white balance settings, so it's unlikely you'll notice dramatic colour casts in your shots day-to-day.

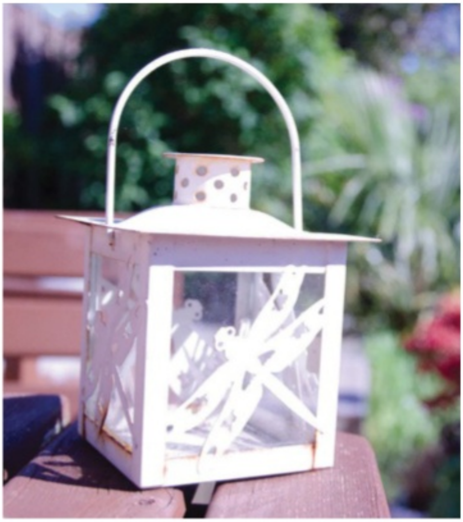
However, it's good to alter your white balance setting so it accurately reflects the scene you're shooting. White balance can be changed in your camera menu and most even feature a shortcut button on the Canon body. Simply hold down the button marked WB, and use your scroll wheel or arrow pad to select a setting.

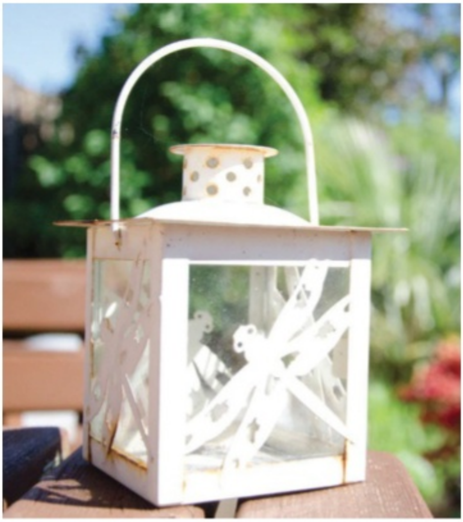
Although white balance is commonly used to ensure accurate colour recording, some photographers use it to get creative colour cast effects. Selecting an incorrect white balance setting will result in an obvious colour cast; this works well if you want to enhance an atmosphere in your photos. For example, selecting the incandescent white balance setting when you're shooting in sunlight will add a cold blue cast.

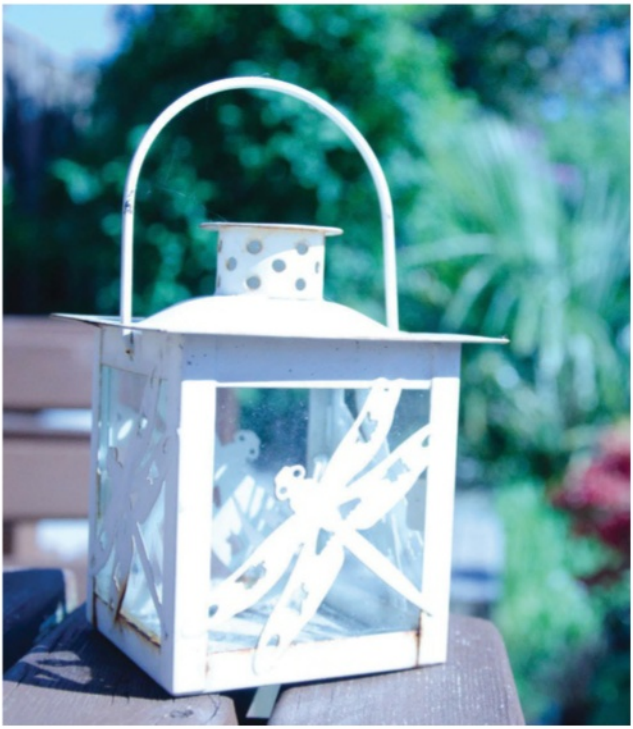
Once you've got to grips with adjusting your white balance, experiment in-camera with some of the other effects you can achieve by using opposite settings to the scene.

## JPEG vs RAW white balance

It's important to note that if you're shooting in JPEG and have set the wrong white balance it will be difficult, and sometime impossible, to correct it later when editing as JPEG files are compressed. If you want to experiment with adding colour casts using white balance, only do so if you're shooting in RAW. RAW files are uncompressed, which means you can get creative with white balance in-camera and adjust or correct it easily later on if you happen to change your mind.



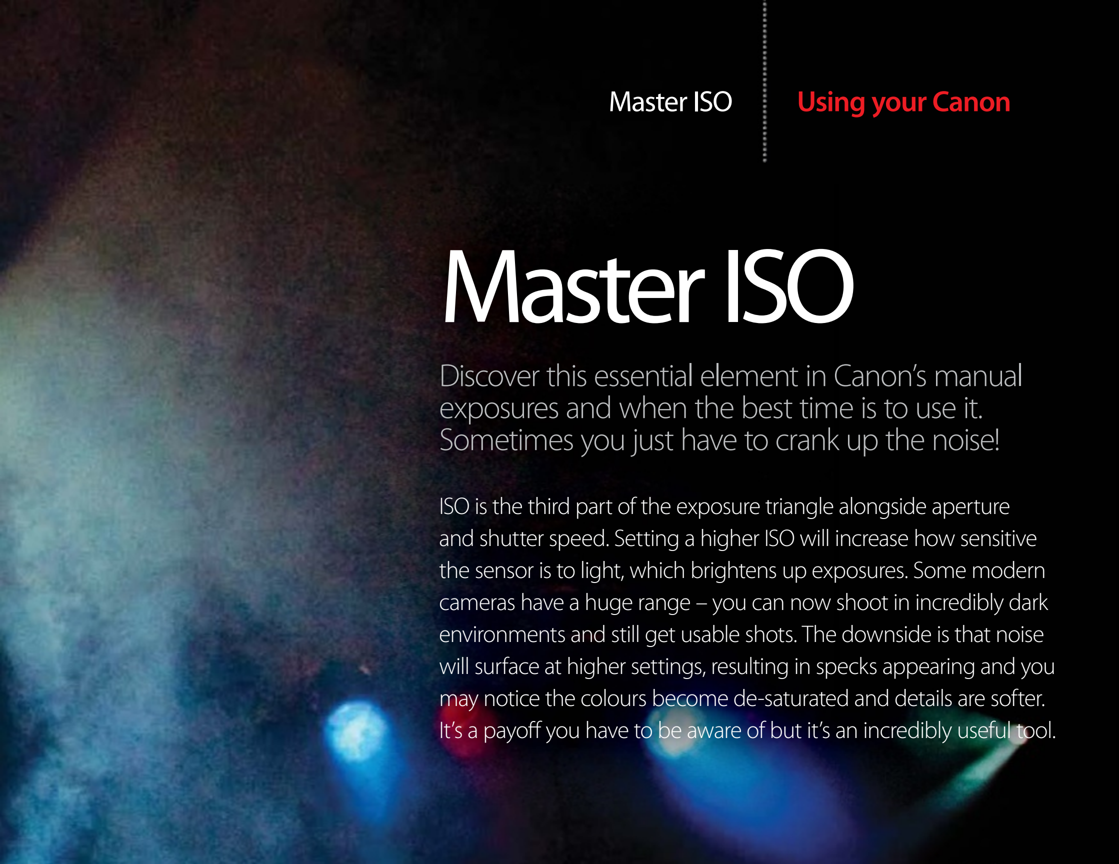




**▲ Daylight**
There are three types of white balance settings for outdoors, including daylight, shade and cloudy. Daylight will help reduce the warm glow of sunlight by cooling the image slightly whereas shade and cloudy, which can appear cool, will be warmed up to a degree

**◤ Fluorescent**
Fluorescent lighting can add magenta tones to your shots, which is much harder to correct in editing. Ensure you select the Fluorescent white balance setting when shooting under this light in order to reduce the magenta hue with green

**◀ Incandescent**
When you're shooting indoors under incandescent light, shots can take on a warm orange glow. To neutralise this effect, the camera will add cooling blue tones when you're shooting using the incandescent white balance setting



# Master ISO

Discover this essential element in Canon's manual exposures and when the best time is to use it. Sometimes you just have to crank up the noise!

ISO is the third part of the exposure triangle alongside aperture and shutter speed. Setting a higher ISO will increase how sensitive the sensor is to light, which brightens up exposures. Some modern cameras have a huge range – you can now shoot in incredibly dark environments and still get usable shots. The downside is that noise will surface at higher settings, resulting in specks appearing and you may notice the colours become de-saturated and details are softer. It's a payoff you have to be aware of but it's an incredibly useful tool.

**Works best with**
**Canon Powershot G1 X Mk II**

◀ **Ambient is sometimes best**
In certain low-light situations, using flash would drown out all the great tones created by ambient light, so in this case you'd need to raise your ISO

▲ **Low ISO landscapes**
In certain low-light situations where your subject isn't moving, it's better to keep your ISO low and use slow shutter speed and a tripod to get well exposed shots. This way you will keep noise out of your images

If higher ISOs can cause noise in your shot, why would you want to use them? The main reason is they allow you to use faster shutter speeds and narrower apertures while still getting correct exposure in low light. With static subjects like landscapes, most photographers keep ISO low and use a slow shutter speed to brighten the exposure, but you'll need a tripod to stop camera shake. If your subject is moving, however, you'll need to use a fast shutter speed to stop them appearing as a blur. You could use a wide aperture to let more light in but sometimes that's not enough and you'll be forced to raise your ISO. You also might not be able to use a tripod, in which case raising your ISO may again be the only option available to you.

You may ask 'why wouldn't you just use flash?' While flash is a good option in a lot of situations, there are times when this isn't feasible, such as in venues that ban flash or when it would drown out the pleasing tones created from ambient lighting, such as with gig lighting or candlelight. In this case, ISO is your best friend.

Modern cameras are becoming better and better at dealing with noise at higher ISOs, but one thing that's worth bearing in mind is that small sensor cameras will produce more noise than those with the high megapixel counts. That's something worth bearing in mind if low-light shooting is on your agenda when selecting a new camera upgrade.

## Edit out noise

Sometimes you just have to raise your ISO and accept that noise will appear, but there is a way to reduce its effects. Most editing suites will have a noise reduction feature – in Photoshop head to Filter>Noise>Reduce Noise. If you shoot in RAW you will have even more control (use the Detail tab in Adobe Camera RAW). This does have a softening effect, so try not to overdo it.

**▲ When flash is banned**
Certain buildings such as churches and museums ban the use of flash. In this instance a higher ISO will allow you to get correct exposures in dim lighting conditions

**◀ Higher ISOs**
ISO 1600 has been used here so that the shot could be well exposed. Modern cameras can handle quite high ISO settings before noise really becomes a problem

**▼ Embrace grain**
Noisy images are much more forgiving when converted to black and white, and grain can even add interest and texture in certain shots. It's often embraced by street photographers for its added gritty look

**▲ Create catchlights**
Flash can be used to illuminate dark areas and if your speedlight has a bounce card, pop this up to create catchlights in the model's eyes

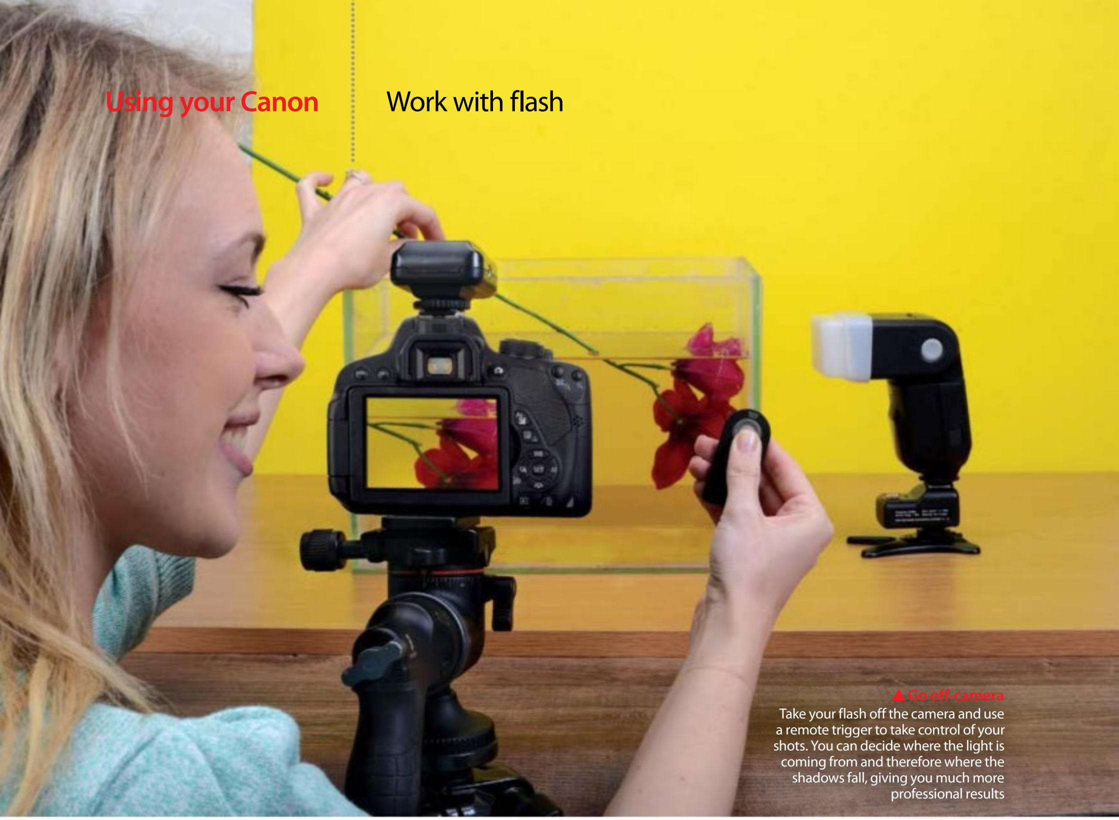
**Works best with**
**Canon 600EX Speedlight**

# Work with flash

Learn how to best use flash with your Canon to illuminate your subject and enjoy even more control with a speedlight unit

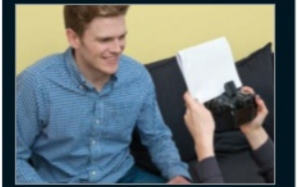
Flash can be the ultimate tool in your kit bag if it's used correctly. It can help to achieve correct exposures in dark environments such as parties or weddings, help with difficult lighting situations, or it can even freeze action due to the rapid burst of light. The problem is, most people start off using flash and end up unhappy with the results. Flash can be harsh if fired straight on, resulting in unpleasant shadows. Here we will teach you how to take control of your kit to avoid these pitfalls and get the best results.

# Work with flash



**▲ Go off-camera**
Take your flash off the camera and use a remote trigger to take control of your shots. You can decide where the light is coming from and therefore where the shadows fall, giving you much more professional results

## Improve pop-up flash results



If you can't afford a speedlight right away, there are tricks you can apply to improve the results you get from your camera's fixed flash. Try placing a piece of white paper underneath it, angled towards the ceiling. This will bounce the light, creating softer, more even results. Also, you could place an old milk carton over your flash to diffuse it, and a piece of tracing paper in front can make a subtle but effective difference.

Flash is a powerful weapon; even your pop-up flash can improve your images. Try using fill-in flash on backlit subjects – where once a subject was in shadow you'll now see an even exposure. The problem with fixed flashes, however, is when fired straight on they can have harsh results, and this is where a flashgun can help.

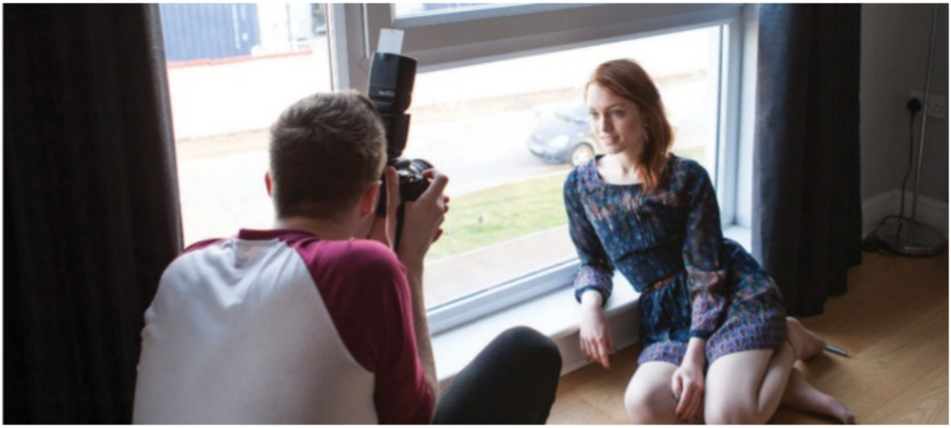
Speedlights offer a greater level of control. Not only can you dictate how much light is fired, but you can also angle it to bounce off ceilings or walls, producing softer results. You can even place them off-camera and use a remote trigger, to move it away from your subject or dictate the angle it hits the subject from.

Use TTL metering and the speedlight will communicate with the camera to select the correct level of flash, or take control with manual mode. The aim is to balance ambient light with flash. Start by setting your camera's maximum sync speed (1/200sec on most cameras), ISO 100 or 200, f8 and around 1/8 flash power, then tweak the settings to see how they affect the outcome. A longer exposure will make the ambient light seem brighter but you can also use a narrower aperture and increase the flash power to make the ambient light darker.

**▲ Experiment with flash modes**
Set your camera to slow-sync mode to produce creative blur in the ambient light but keep your main subject sharp. You might also want to try stroboscopic flash, which fires multiple times to capture different stages of motion

**◀ Fill in backlit shots**
When your subject is backlit and their face is in shadow, use your flash to fill in the light. Even a pop-up flash can make a big difference in this particular scenario

**▼ Bounce the flash**
When shooting indoors, direct the speedlight towards the ceiling to bounce it off there and then towards your subject. This creates a more diffused light that has a much more flattering result



**▲ Shoot stunning portraits on location**
By using a remote trigger for your flash gun, create stunning location portraits that have an edge easily and seamlessly

Works best with
**EF 85mm f1.2 lens**

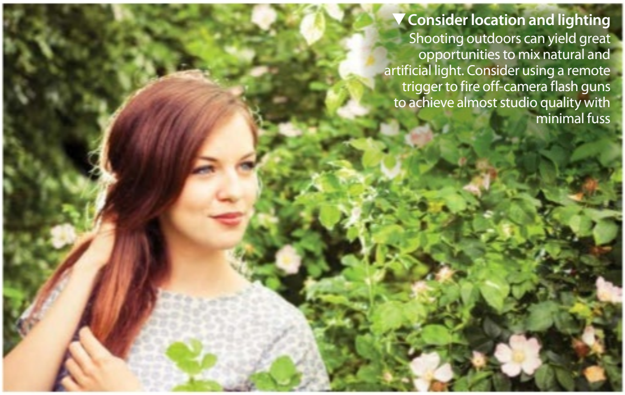
# Capture stunning portraits

Exercise your creativity with your Canon to create simple, yet effective portraits without the need for big flashy setups

Portraits, head and shoulder shots, selfies – no matter how you look at it, portrait photography is a massive part of our day-to-day life. How can you ensure that you're capturing stunning portraits with your Canon camera? The art of taking a portrait is a skill, and like all good skills, it's something you learn, so let's start with the basics.

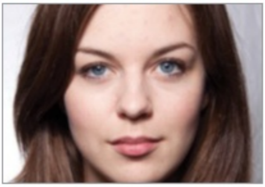
## The essential kit

For any photographer starting out, all you need are the three core materials: light, a camera, and your subject. Once you have acquired your model and your kit, it's time to look at the technicalities of both what and how you're going to photograph. People come in different shapes and sizes, so it's easy to get carried away in the flow of taking images and forget what looks good and flattering

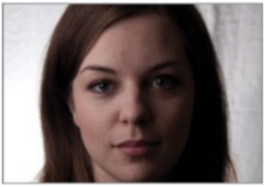


▼ **Consider location and lighting** Shooting outdoors can yield great opportunities to mix natural and artificial light. Consider using a remote trigger to fire off-camera flash guns to achieve almost studio quality with minimal fuss

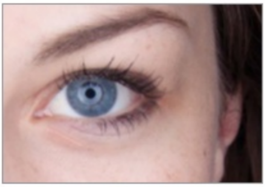
## Lighting styles



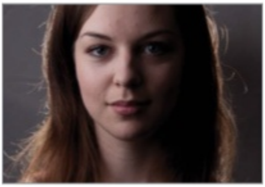
1 **Flat lighting** Use even lighting to flatten shadows on your model's face and even out skin tones.



2 **Rembrandt lighting** Create a deliberate shadow for a dramatic look by lighting predominantly from one side.



3 **Ring flash** Designed to create hard edges and bleach out detail, ring flash is ideal for interesting portraits.

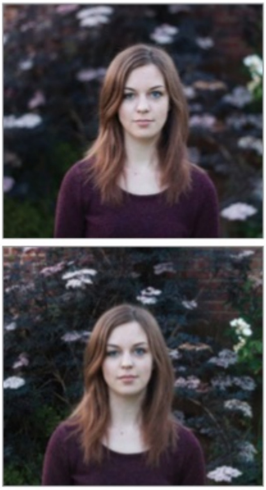


4 **Rim lighting** Add rear lighting to create a rim of light around their body; great for adding drama and forcing focus.

## Lens and depth of field

**1 Zoom lens**
A zoom lens has the lowest aperture on both the widest and the furthest telephoto option.

**2 Prime lens**
The prime lens has no zoom function, so the aperture is achievable constantly.



**3 Depth of field**
An aperture of f2.8 will soften foreground and background; f16 will give more overall focus.

**◀ Simple but effective portraits**
Beautiful portraits don't have to involve heavy make-up and over-styled hair. Sometimes minimal make-up, soft lighting and the right expression will be just as eye-catching

to your subject. For instance, look at your choice of lens; if you are using a zoom lens then chances are it will start off at a wide-angle, somewhere in the region of 18mm and go to a narrower angle like 55mm or further. The point of the zoom system isn't just to get closer to a subject without moving, but also to alter the depth of the image and the perspective of the subject being shot. There are other benefits, such as the minimum aperture range, which will differ when you shift from one focal length to another. Typical lenses used in portraiture are a fixed 50mm which will have a wide aperture, starting at around f1.8 at the lowest, allowing a narrow depth of field, and a higher aperture around f16 giving a wider depth of field. The only negative of using a lens with such a wide aperture is that it can be prone to softer images, because your body movement, as well as the model's, will result in a shift in your depth of field, making them soft.

Another lens commonly used is an 85mm prime. This shares a similar wide aperture to the 50mm, but the 85mm has a narrower angle to keep the distortion of the image to a minimum, which also keeps background detail limited when your subject fills the

frame. Another tip for flattering shots is to take your own body positioning into account. If you look up at your model, it can distort their appearance in an image, making them look like they have a fat neck and a small head. As a rule of thumb, looking too far down on a subject makes them look small and submissive, while looking up at makes them look big and dominant. Straight on with squared shoulders looks dominant and unflattering. This isn't to say that the only way to shoot a model is face-on, as it's definitely worth experimenting with various angles to see exactly what works best for your model. Once you know this rule, you can exploit it.

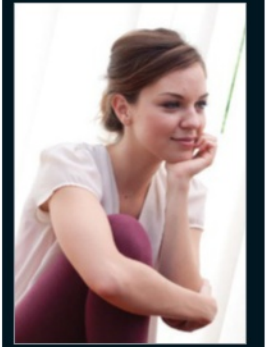
On location shots, using a reflector to bounce sunlight back at your model will replicate the sunlight around you, enhancing your subject. A flashgun will let out a direct blast of light that, if unadjusted, could bleach out your image. When aimed and powered correctly, a flash gun will give smooth, accurate lighting. With studio lighting, you must understand each light you use, how they interact and your choice of light modifier. When using a flash gun, bounce the flash light to minimise the risk of bleaching. Use a light meter to measure each light's incident meter reading (the point where the light hits the subject) to gauge the light strength. Review your shot, ensuring you can see the catch lights in the subject's eyes.

> "As a rule of thumb, looking too far down on your subject makes them look small and submissive"

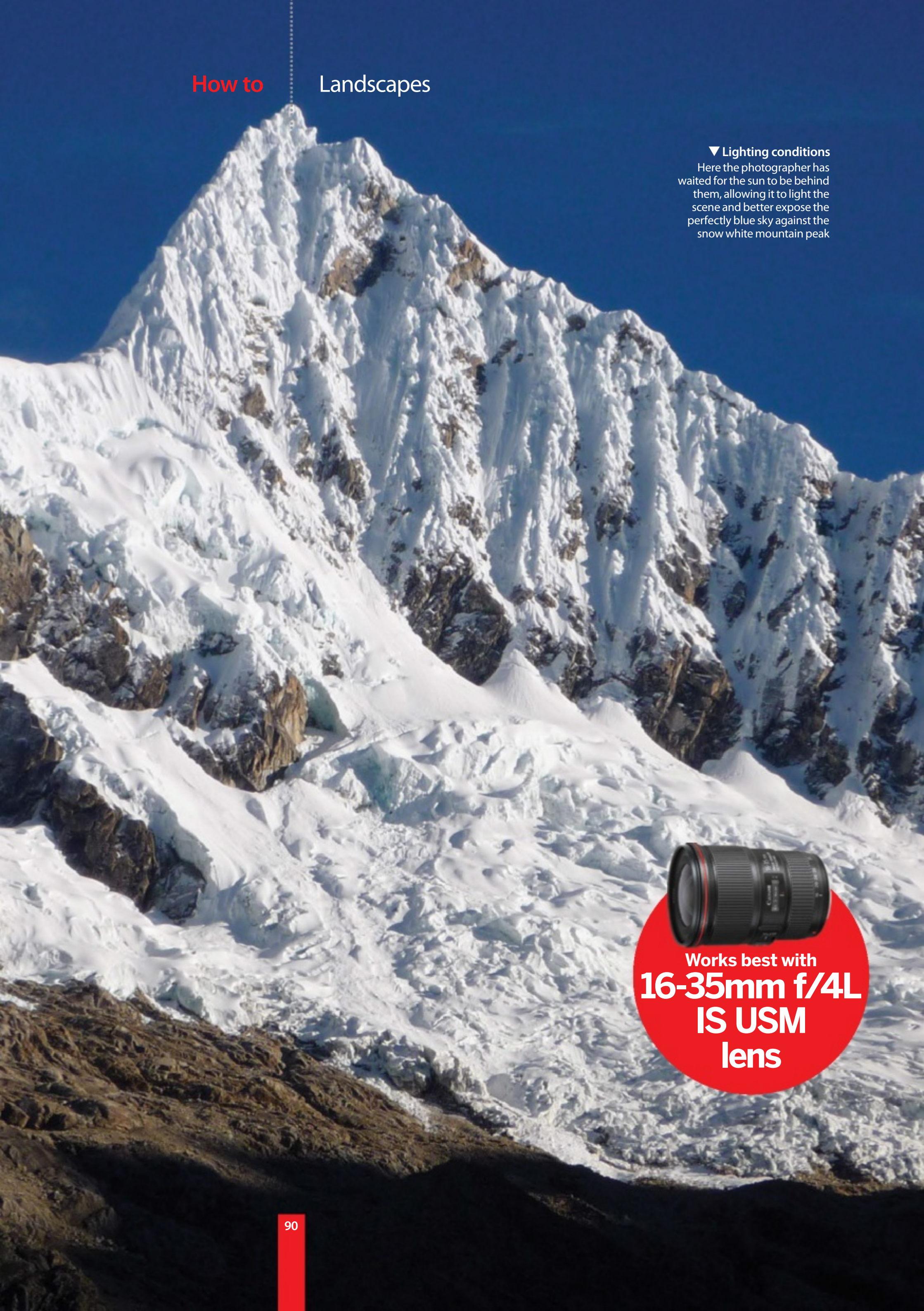
**▲ Alter your lighting for big impact**
In a studio environment, try turning off all your lights bar one. With the correct lighting modifier and power you will be able to create an atmospheric portrait quickly and easily. All your model will have to do is alter her pose

**◀ Meter your light**
Use a light meter to measure how powerful your light is. These handy little devices are relatively expensive but are a must-have if you are using studio lighting or creative lighting outside

## Quick tip



If shooting at home, try using white sheets as a backdrop, or in this instance, white blinds. The natural light will bleach out the sheet when you expose for the model in front.



**▼ Lighting conditions**
Here the photographer has waited for the sun to be behind them, allowing it to light the scene and better expose the perfectly blue sky against the snow white mountain peak

**Works best with 16-35mm f/4L IS USM lens**

# Shooting landscape photography

Use your Canon to capture dawn in the British countryside or the daunting magnificence of the French Alps with landscape photography

Landscape photography is one of the oldest and most widely appreciated forms of photography. Traditionally it explores the beauty of natural environments, such as dense forests, deserts and mountain ranges. Landscape photography isn't limited to nature; urban landscape photography can be just as awe-inspiring. As long as you can find a space that inspires, you can shoot landscape photography. It's also an easy style to get into, as all you need is a camera, a lens and a good eye for landscapes.

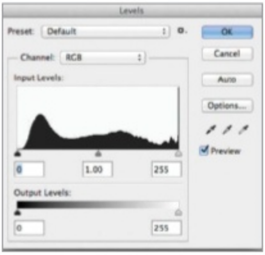
## Picking a good lens

There is a benefit to building up the right kit when it comes to landscape photography. If you're looking for a lens specifically for landscape photography it's important that you consider your

**◀ Shutter speed** The shutter speed has been slowed down to create a blurred effect. If this scene were shot with a fast shutter speed the harshness of the waves lapping against the shore would change the entire tone of the image

## Top landscape edits

**1 Post processing** Although it's best to achieve your effects in-camera, there is room to improve and correct parts of your image with post processing using editing software such as Photoshop.



Preset: Default

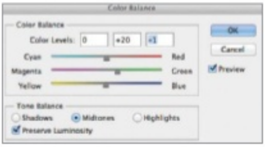
Channel: RGB

Input Levels: 0 1.00 255

Output Levels: 0 255

☑ Preview

**2 Levels** The Levels tool can be used to reduce or increase the light levels of the shadows, midtones and highlights in an image, helping you to even out a shot's exposure.



Color Balance

Color Levels: 0 +20 +1

Tone Balance

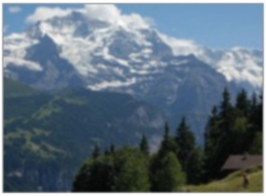
○ Shadows ● Midtones ○ Highlights

☑ Preserve Luminosity

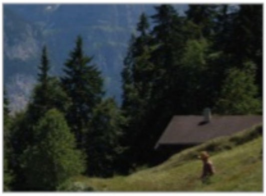
☑ Preview

**3 Color Balance** Adjust the colour balance of a shot to make key colours pop out of the scene, most commonly these are the greens of the land and the blues of the sky.

## Composing a shot



**1 Layering a landscape** In this image the foreground, mid-ground and background are perfectly composed. The rule of thirds has been utilised so the eye is drawn to the key points of interest in the shot.



**2 Foreground** The foreground should stand out in a landscape photograph, but don't let it dominate the scene. In this case the house and worker do help to complement the distant mountain range.

**3 Midground to background** By placing distance between the foreground and midground, then having the midground blend more seamlessly with the background, the shot feels as though it has a natural composition, without drawing too much attention to itself.

▲ **Mountain range**
The photographer has created a perfectly even exposure across the entire scene, despite the challenges that would have come from the snow and the sky being much brighter than the darker middle ground landscape

Canon camera's format sensor. Canon sensors come in two sizes; 35mm full frame and APS-C, which has a 1.6x cropped sensor. When shooting with the APS-C sensor there will be a magnification of 1.6x compared to a full-frame sensor. So, you'll want to consider a slightly wider lens when shooting landscapes with a cropped sensor, to counterbalance the 'crop factor'.

When shooting landscapes you want the maximum depth of field possible, keeping everything in the scene as sharp as you can. This means shooting with a smaller aperture around f8 to f16. Because of this you don't necessarily need a lens with a high f-stop, which also keeps the cost of the lens down. Remember, when working with f-stops, the higher the number the larger the depth of field, meaning more of your shot will stay in focus. This is crucial when shooting the vast expanse of a landscape, so that you capture the whole scene.

### Extra equipment to consider

There are a few other pieces of kit worth investing in for landscape photography. If you would like to shoot with a slow shutter speed to created a blurred motion effect for different elements in the shot such as water or mist, then it's worth investing in a Neutral Density (ND) filter. ND filters restrict the amount of light going through the

**▲ Depth of field**
A high f-stop has been used to give this shot the maximum amount of depth of field possible. The image stays sharp from the foreground right back to the trees in the far distance

**◀ Depth of shot**
Depth is a key feature of this shot. The foreground, midground and infinite background of the shot has determined the composition of the image

lens, meaning you can slow the shutter speed of your camera whilst still maintaining an even exposure.

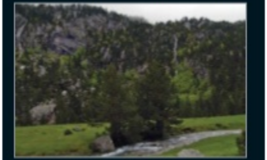
A gradient ND filter can restrict the amount of light coming from certain parts of the shot. You can use a gradient ND filter to even out sky exposure (which tends to overexpose) compared to land. One more filter to look into is a polarising filter, which helps to reduce harsh glares from sources of light such as the sun or reflections, adding better detail to highlighted areas of your shot and adding intensity of colour. A polarising filter also helps protect your lens. Finally, a sturdy tripod is key for landscape photography. This will steady your camera when shooting with a low shutter speed, as well as helping you methodically set up your shot and wait for the perfect moment to start shooting.

## Consider the elements

Weather is probably the biggest deciding factor when it comes to getting the shot you want, and getting the perfect light will make a big difference. A good time to shoot almost anywhere is just after sunrise, or just before sunset.

Bend the rules. This is flat with an overexposed sky, but these help make the photo stand out.

## How not to shoot landscapes



In this shot the point of interest (the two trees in the midground) has been placed dead centre in the shot, ignoring the rule of thirds. Also by shooting the hills in the background front-on, the shot has absolutely no depth. The sky is unevenly exposed and most importantly the shot isn't even, creating a disorienting effect.

# Shooting finer details with your Canon

Getting up close and personal with the incredibly small isn't just about bugs – everyday textures such as bubbles can seem alien through a macro lens

Macro photography is arguably one of the most abstract incarnations of the art, whether it's photographing tiny insects and making them look like behemoths or capturing textures and transforming them into abstract landscapes.

So what is macro photography? The simple answer is close-up, detail photography, like photographing details in a landscape through binoculars. Macro photography is relatively straightforward as it's all about distance. Not just the physical distance between photographer and subject, but more a closeness inside your camera. The sensor within your camera, whether it's cropped or full-frame, sits static at the bottom of a lens once one is attached, and there it stays, capturing the light sent to it. All the lens has to do is move glass closer or farther away from the sensor to send a focused or zoomed-in image. The difference between macro lenses and standard lenses is lens construction.

▲ **Abstract beauty**
By shooting macro, and using a little creative thought, you can turn everyday items such as washing up liquid into striking colourful textures

## General macro tips

1 **Be supportive to your subject** With small objects, it can be helpful to support them via rigid clips or shield them from ambient wind if shooting outside.

2 **Back ground checks** Just because you are shooting fine detail doesn't mean you can't use an interesting background. Try coloured sheets or something that creates bokeh.

3 **Get closer with an extension tube** To get closely focused on such a tiny object is one thing, to fill the frame with detail is another. Increase your focal length with an extension tube.

Works best with
**EF 100mm f/2.8L Macro IS USM lens**

## Tips for macro success

**1 Use a sturdy tripod** You will be micro focusing on an already tiny object so any movement could shift your focal point.

**2 Use the right lens** Depending on your subject, and the level of macro shooting you want to achieve, select the correct lens.

**3 Set aperture** If you are looking to focus on a specific area, or focus on the whole item, set the aperture accordingly.

**4 Use flash for extra detail** Try bounced flash light. It's perfect for specular highlights and enhancing colour.

◀ **A bug's life in full glory** As macro photography is a great way to shoot insects and flowers, let's look at what makes a great macro shot. Looking at the subject matter, as well as the composition, there is more at play than just finding the subject to shoot

The internal glass element in a macro is further away from the sensor, and will usually be a prime lens. A prime lens is a fixed lens with no zoom. It stays at one focal length. The light passing through the lens has farther to travel, and the speed of which the light can travel is relevant to the f-stop listed on the lens.

The more glass within the construction of a lens, the higher the f-stop as there are multiple pieces of glass for the light to pass through, slowing the strength of the light. With a dedicated macro lens you have minimal glass, meaning a faster f-stop, usually around f2.8. To shoot effectively in macro, you need an idea of the subject you want to shoot, a lens that will enable you to get close enough to achieve the desired result and a tripod to keep things steady.

## Which lens should you use?

If you want to photograph insects and flowers from a casual distance and are looking to dabble, then a prime lens in the region of 90mm to 105mm will be perfect, allowing you to get in close enough to fill the frame and experiment with depth of field. For the more seasoned macro enthusiast, wanting to get that bit closer and not afraid to step back and add some distance between them and the subject, a prime lens ranging in the ballpark of 150mm-200mm would be adequate. Again, this choice would enable you to fill the frame, using the aperture selection available within the lens to

affect the depth of field, forcing attention on your subject. This is the main draw to macro photography – the sheer detail you can gather from a subject.

Of course there are other alternatives available, such as a reverser ring, which reverses your current lens' focal distance by reversing the traditional attachment of your camera body and inverting your lens. Although initially a great and cost-effective measure, it does leave the most fragile part of your lens open to damage.

## Filters and tubes

Another alternative is using macro filters that can be attached to your lens. Through a combination of glass screw-threaded filters, they bend the light through convex and concave glass. Extension tubes are exactly as the name implies – an extension tube to further the distance between the glass and the sensor, allowing for a closer shot. What you get in extra closeness though, you lose slightly from your aperture, as the light is travelling further than intended, so it may be an option to consider your ISO or even a flash gun when shooting macro.

For macro flower shots, use glycerine to recreate water drops. Simply drip it into place.

▲ **Ugly bugs**
Shooting macro can not only allow you to get close to an otherwise unreachable subject, but also add a sense of personality to it. Take insects such as the preying mantis, who are far from human but we can still relate to simply due to their pose

◀ **Reversal trick**
Additional tools such as the reverser ring can be used as effective alternatives to dedicated lenses when shooting macro. By reversing the focal qualities of your lens, they bring the subject closer

## Macro ring flash

Ring flash has become associated with high fashion and creative portraiture of late, however it was originally a lighting practice most commonly used in dental, medical and even forensic photography. Employed as a way to evenly light a subject with minimal shadows but still with maximum detail, it is the perfect lighting choice for macro photographers as the light sits in front of the lens itself.

Macro ring flashes are a lot smaller than the now more familiar portrait ring flashes as they need to direct the light into much smaller areas.

**▲ Shoot close for character**
Closely-cropped frames yield instant impact and are ideal for showing the animal's character. Usually shots like this need a telephoto focal length so consider boosting your ISO or using a tripod to avoid blur. Alternatively move a little closer to the subject, as long as it's safe to do so!

# How to capture wildlife shots

Whether you want to use your Canon in your local woods or snap away on the plains of the Serengeti, discover ways to improve your wildlife shots

The greatest asset, other than a Canon camera, that every wildlife photography enthusiast should have, is patience. If you're not a patient person this genre may be a struggle, as typically to get the most natural, awe-inspiring images you'll need to conceal yourself, keep quiet and wait, sometimes for long periods of time, before your subject even emerges. What's more, when the animal does appear its presence may be fleeting, so it's important to know your camera inside-out, so you can work efficiently in the few moments you have. Over these pages we'll cover everything you need to know, from embracing the right settings to carrying the best kit.

## Set up to shoot

Ensuring your camera is ready for action before any wildlife appears makes the difference between getting the shot and not. As wildlife photography is all about speed, your exposures will need to be as fast as the subjects you want to capture. As you'll need to use far-reaching focal lengths you must consider raising the ISO or supporting the camera to ensure your frames are crisp.

**Works best with**
**EF 200-400mm f/4L IS USM lens**

## Composition tricks

**1 Rule of thirds** Ensure the main point of interest lies on one of the intersecting lines or points. This suits telephoto and wildlife focal lengths.

**2 The eye dance** Compose an image so the viewer's eyes 'dance' over the image. Frame the shot with interesting elements placed all over.

**3 Break the rules** Break the rules when the occasion calls for it, as not every photo needs a compositional trick to enhance it. Simply use them as a guide to help you get started.

## Get that perfect shot

**1 Patience is a virtue** The more you know about an animal the better. Use this to narrow down the time and place of the shoot. Then wait for it to appear.

**2 Settings in motion** Before the animal appears, have your settings already dialled in. Aim for a fast shutter speed and know your ISO limit.

**3 Killer capture** Choose an orientation that best suits the animal, lock the focus and exposure then fire the shutter when the animal looks at you.

▲ **Advanced shooters**
When it comes to settings, you'll probably find it easier to shoot in manual or Shutter Priority, to ensure that the images are well exposed, with nice crisp details and accurate colours

The first thing you need to know, if you're planning on shooting handheld, is how high you can push your camera's ISO without noise ruining the quality of your imagery. Test this at home before setting off and inspect the results on your computer. Once you know its limits, avoid going beyond this in the field, but don't be scared to go as close as you can to this limit as higher ISOs will allow you to gain faster shutter speeds, essential for this breed of photography. If you can erect a tripod covertly, keep low to the ground or perhaps lie down and shoot with your camera supported on something like a solid backpack, your frames are less likely to blur. If shooting handheld, support the camera underneath with your spare hand and either support your shooting elbow on the ground or on your knee for added stability.

## Picking a lens

Lens choice can be tricky. You should choose which lens to use wisely as you'll want to avoid making any noise, such as that caused

▲ **Practice makes perfect**
A good way for any wildlife photographer to begin is by photographing pets and domestic animals. They are likely to be more willing than the real thing but you can start to see how speed is one of the most important factors here

by changing lenses, in the beasty's habitat. A better idea is to take a couple of cameras with lenses sporting varying focal lengths ready-attached, so you can simply 'switch' lenses by swapping cameras. Whilst prime lenses provide undeniably sharper results, it's perhaps more advisable to use zoom lenses in this field unless you know your subject will stay in one place or if they are like to move slowly. Zoom lenses are better for faster-paced or less predictable animals, as they will offer greater compositional scope.

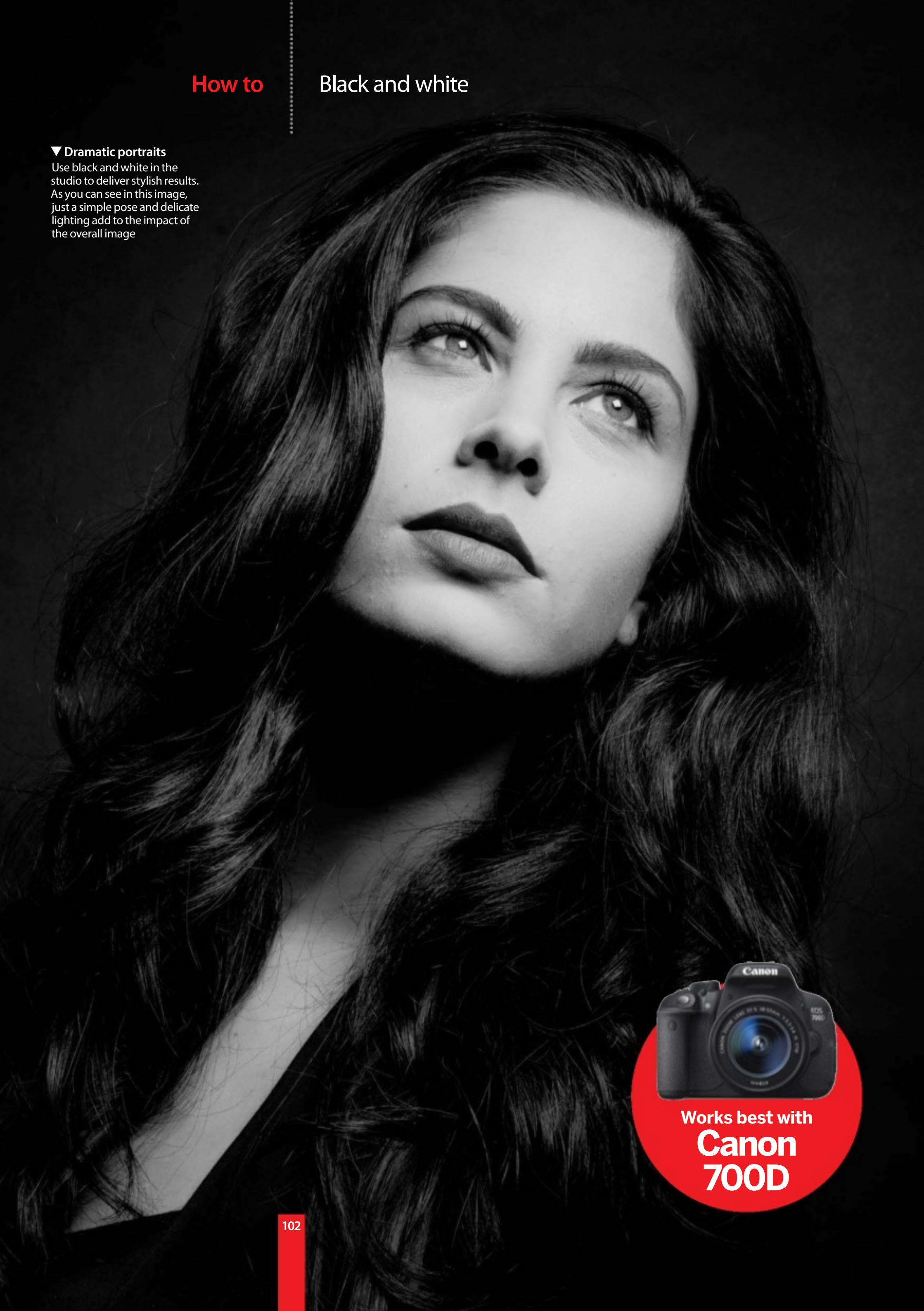
## Know your animal facts

The more you know about the animal you wish to photograph, the more likely you are to capture stunning imagery. A little research goes a long way here, as information like the hours of day it's active will tell you when to get into position, plus discovering what it eats will give you a tip off as to where to lie in wait. The more you know, the more confident you will be to guess what it will do next, thus you can better follow the subject, anticipate its movements and get as many usable frames as possible. This is crucial if you want to shoot character portraits showing the personality of the animal. Get as close as you can and aim to frame with eye contact. Whatever you do, just have fun with it and enjoy what you're shooting.

When shooting handheld, place your elbow on the ground or on your knee, and your spare hand under the camera.

## Focal length versus speed

While most contemporary lenses host vibration reduction technology, it's a good idea if you're shooting handheld to know what the minimum shutter speed of the camera and lens is for ensuring your images are sharp and not blurred. The general rule of thumb for this is to not exceed an exposure time longer than the focal length, so for example if you're shooting at a 250mm focal length, so it's advisable to use a shutter speed faster than 1/250sec.



▼ **Dramatic portraits**
Use black and white in the studio to deliver stylish results. As you can see in this image, just a simple pose and delicate lighting add to the impact of the overall image

Works best with
**Canon 700D**

# Black and white elegance

Add drama and intrigue to your Canon shots using some of our tips for flawless black and white images

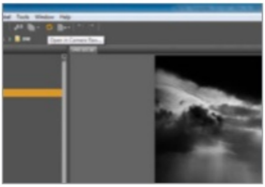
Black and white images are timeless in their appeal and the good news is that the whole procedure can be simple. Because cameras have default style options for colour toning and advanced white balance controls, shooting in black and white is relatively easy. Select your shooting mode, set it to black and white and away you go. But if you are serious about the style, you will need to put in a little more effort for the results you want.

## The rebirth of black and white

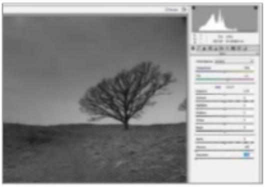
The first *Sin City* film was an explosion of style that captured people's imagination. Shot on green screen, lit to replicate the classic film noir look and mainly black and white, it paid homage to its source material, and also made black and white new and accessible as a creative method. Whereas black and white had been typically employed as a reportage or fine art option for many years, suddenly billboards were saturated in timeless, modernised, monochromatic images designed to be edgy, cool, and dramatic.

▼**Architectural drama** Black and white toning techniques add mood. By burning in detail or by using lens filters, you can darken edges and force the focal point

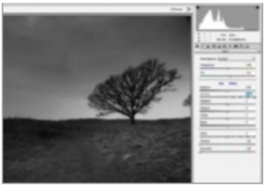
## Edit in Raw



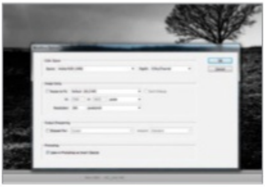
**1 Open your image** Open up your JPG or RAW file into Adobe Camera Raw by clicking the RAW edit button in Bridge.



**2 Reduce the colour** Reduce the vibrancy and saturation of your image by sliding the colour adjustment controls to 0.



**3 Add contrast** Boost contrast by using the Contrast slider options. Use the other sliders to add more depth in the tones.



**4 Convert to Smart Object** Click the image detail option at the bottom of ACR and select the open as Smart Object option.

## Darken skylines

**1 Set up a tripod** Fix your camera up on a tripod and set it to Live View mode if available. Get the horizon level and the composition sorted.

**2 Filter magic** By using a gradient filter you can darken skies, which will add drama to the scene. Attach the filter and line up the gradient with the skyline.

**3 Set your shooting mode to B&W** In your camera's shooting modes, you will find the black and white option. Select it to give an instant view of what your final image will look like.

**▲Timeless toning**
Many portrait companies adopt a policy of shooting detail shots of babies such as hands, feet and faces as well as their general portraiture, in monochrome. More often than not, this is to recreate a timeless quality

Brands adopted the style, and portraiture companies busied themselves to sell to the public.

Obviously black and white existed before digital and way before colour, but as it's in vogue again, and with the advantages of modern digital techniques, mastering the art is now essential.

## The kit determines the result

As you are changing the colour tone of your image, lens choice and depth of field will be guided by your intended final image. For example, if you wish to achieve an interesting architectural shot, you may want to use a wide angle lens. If you are looking to photograph people, use a portrait lens around 50mm or 85mm.

Familiarise yourself with the technical operations of your camera, such as lighting setup if shooting in studio, or the colour spectrum of the scene. Knowing how to manipulate/enhance these for black and white is half the battle.

If you are shooting in a studio environment, you are spoilt for choice given the dynamic results delivered by both constant and flash lighting. Add drama and emphasise the qualities of your subject by adhering to lighting ratios and techniques like rim lighting. Use simple patterns and silhouettes such as a fan or the line detail of blinds to tell a story by simply lighting them, creating shadow. Consider harsh lighting to strip colour detail away.

**▲ Aim for symmetry**
This image uses compositional tricks and a balancing of positive and negative space to draw the viewer into the shot

**◀ Slow shutter speed**
Using an ND 8 filter to block light from the lens, as well as a slow shutter speed and tripod, you can capture soft images

## Understand how colour channels behave

When editing in a program such as Photoshop, you have access to the colour channels in your image. Look at these as a means to view the impact of choosing one channel to dominate the conversion and you will see your image's potential.

The red channel lightens the reds, yellows and oranges to a soft and subtle grey tone. The green channel will lighten greens, cyans and yellows and the blue channel will lighten the blues. So if you are shooting a person on a grassy bank in the middle of summer, you will have a large degree of blue in the sky, green on the floor and a small amount of red in the person's skin tones. To keep the person's skin tones smooth and soft and keep the rest of the image a darker shade, edit your image into black and white via the red channel.

## Manual adjustments

Considering your subject, assess what is the main draw of the image. Take architectural photography as an example; do you want the building or the mood to be the dominant feature? This is where filters step in. Circular polariser filters fix to the lens via a screwthread attachment. They consist of two polarised sheets of glass that when twisted, create a darker skyline and enhance the colours of your image. Gradient filters will affect only half of your shot and are perfect for darkening, adding mood and toning cloudy skylines. Use a slow shutter speed on your camera as well as a stop down filter to capture movement in clouds; when used in architectural photography, this is a great technique to add drama.

## Filter selection

Pro1 Digital 52mm MC PL-C Made in Japan
HOYA Pro1 Digital 52mm MC
CLEAR USA
Max. ND400

Filters are a great way to enhance black and white images. There are numerous options, such as gradient filters, which are essential in landscape photography for much the same reason as they are for black and white photography; they enhance the contrast of skylines.

Others such as full colour filters will adjust the contrast of specific tones in the image, so a red filter will react totally differently to a blue filter when used on the same image.

**▼ Low light doesn't mean no light**
By shooting in low light, it doesn't have to mean the dead of night. In this image a warming filter and a cool colour balance have been used to shoot a model in uncovered low lighting conditions

Works best with
**EF 24-70mm f/2.8L IS USM lens**

# Master low light photography

You don't need daylight or studio lighting to capture great images with your Canon; experiment with low light to uncover new possibilities

Shooting in daylight is something we take for granted, after all it's when the majority of our shots are taken, but when it comes to mood and setting, low light is hard to beat. Shooting in low light is a skill that utilises your camera's sensor capabilities for noise reduction and ISO sensitivity, as well as your lens' aperture range. When you set the ISO on your camera, you adjust its sensitivity to light. On a standard DSLR your typical ISO range would be 100 to 1600, and on higher-end DSLRs the range would be from LO 1.0, lower than 100, to HI 1.0, higher than 6400.

## Know your ISO

A general guide to understanding ISO is that 100 is suitable for the brightest sunny day or studio lighting; 400 is for a typical day – slightly overcast, but still bright. ISO 800 would be for indoor use and anything higher, 1600 or upward, is used in darker conditions such as night or music photography. The interesting thing with ISO

◀ **Go for bokeh** Ensure your lens goes down to f2.8. When you shoot at that aperture, your background will fall out of focus, creating a bokeh effect

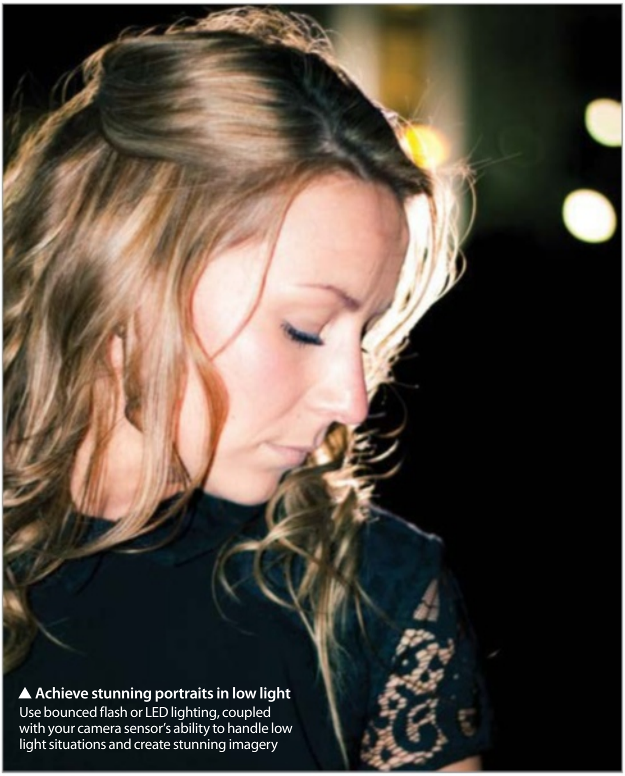
## Low light shooting

**1 Pose your model** Set your camera on a tripod in a suitable location with ambient light behind your model.

**2 Adjust your settings** Tweak settings for low light shooting, so a wide aperture, a high ISO and a slower shutter speed.

**3 Shoot for bokeh** With your camera's aperture at its lowest, the aim is to have a bokeh effect dominate your background.

**4 Use a torch for lighting** As your flash could be too harsh for low light, why not use a simple torch to create soft lighting?



**▲ Achieve stunning portraits in low light** Use bounced flash or LED lighting, coupled with your camera sensor's ability to handle low light situations and create stunning imagery

is that when it is increased, you see better results from some other values such as shutter speed and aperture. This allows you to shoot at a faster frame rate; a boost for wildlife and sports photographers, or those who want a narrower aperture for extensive depth of field.

High ISO can, however, create digital noise. This is the same as the grain you would have received from your film choice back in the day as it is individual pixels of the sensor reading data. However, with camera sensors now having a higher megapixel rating and construction becoming more advanced, digital noise is becoming a moot point. This is also true if you are familiar with editing software, because any noise can easily be removed using dedicated tools.

## Essential equipment

To get the best results from low light shooting, you should always carry a sturdy tripod with you. Because you are taking from one to

## Three steps to remove colour casts

**1 Set camera to tungsten** Most low light location shoots will have an orange glow, so set your camera's white balance to tungsten, or if you can customise your Kelvin scale use somewhere in the 4000k range.

**2 Use a cooling and warming filter** Alternatively, most flash guns will have cooling and warming filters with them. These are designed to alter the colour temperature of an image by slotting on the flash head and tinting the image manually.

**3 Edit in Raw** Use the colour temperature slider controls in Raw to reduce and alter the colour tone manually. When combined with the split toning panel also in Raw shadow and highlights can be toned, removing casts easily.

give to the other in exposure value terms, be prepared to sacrifice your shutter speed first. If you are shooting a landscape and the air is calm, you can afford to drop your shutter speed so that you can let light into the sensor for longer, reducing the noise and keeping a narrower aperture. This is why you will need a tripod; you can keep the camera perfectly still and fire the shot either remotely or using the timer option.

As with most techniques, there is a caveat and that is the extra light being let in will have a warmer tone, setting the colour temperature to a warmer point on the Kelvin scale. To fix this, assess the lighting and adjust your white balance accordingly.

Obviously the art to low light shooting is that you aim for a true rendition of what the eye sees at night by using available light. You want to see the ambient lights and colours, so that rules out using a flash, right? Wrong. If you have a flash gun that can pivot at an angle, be powered down manually or can be fired remotely, you can bounce the light back into the model's face. Firing directly at the model will bleach out detail and darken the background, so be cautious of your angle.

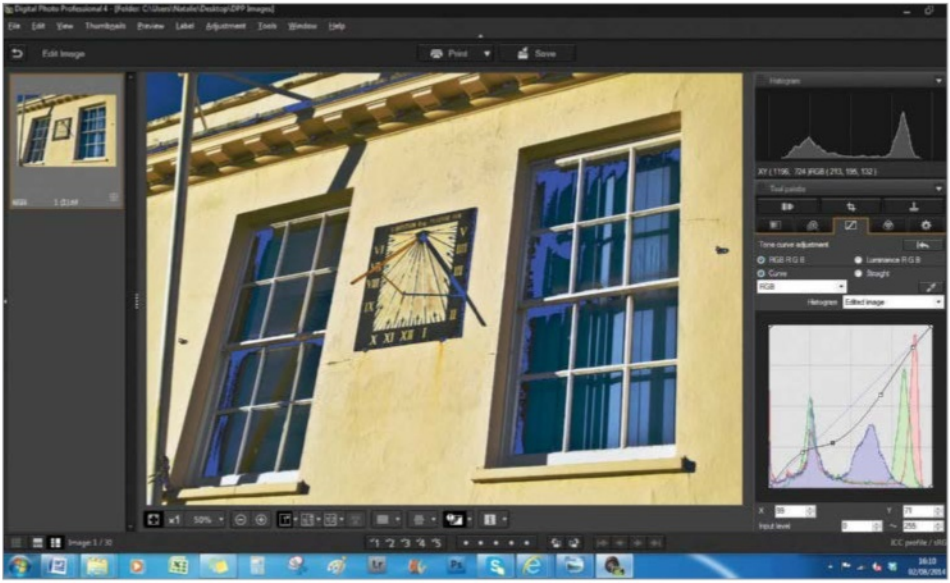
Carry a torch with you; not just to see where you are going, but so you can light paint your subject.

**▲ Torchlight**
By using torchlight to light your model, you can create a soft shadow to your image, or a hard light – the choice is yours. In this image an LED light was used to light paint the model

**◀ Create a sense of atmosphere**
By shooting in low light, already you add a sense of story telling to your imagery, but what about pushing that story further?

## Always be prepared to shine

If you are travelling to a location, always make sure you have a torch at hand. Not just to see where you are going, but also so you can light paint. Light painting is a technique where you steady your camera on a tripod and by using either a shutter release cable or a long exposure time, you then expose your image to the available light and define your subject by washing over it with torch light. Cool LED lights are the best to use for this, as the cooler temperature of the LEDs cut through the natural warmth created by long exposure to light.



## Use it to

**Lighten shadows**
Add light to the shadows.

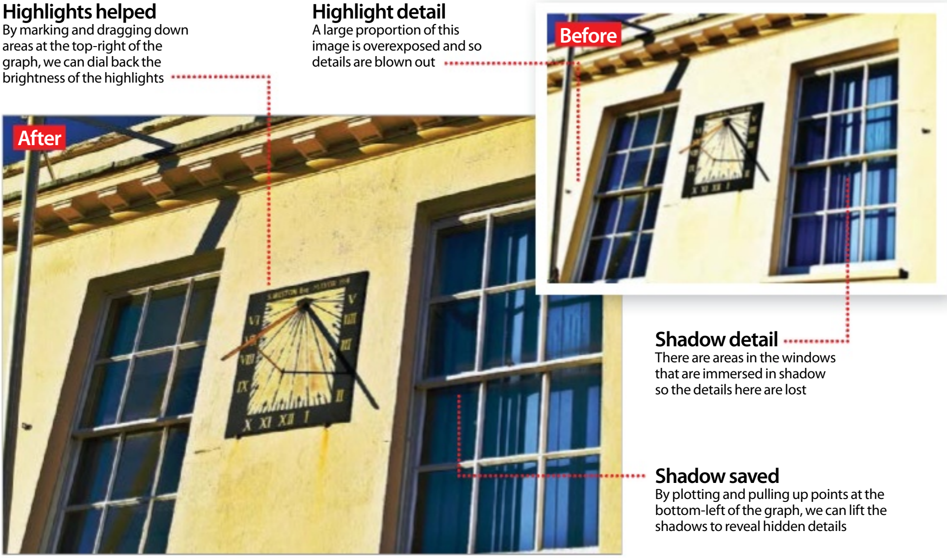
**Improve highlights**
Decrease the harshness of highlights and regain detail definition in the image's blown-out areas.

**Balance exposure**
Balance the image's exposure as well as the overall clarity and quality.

# Perfecting exposure

Learn how to balance shadows and highlights with Digital Photo Professional's curves tool

Balancing exposures can be a tricky business and not always possible to do in-camera, particularly if you have a high contrast scene, for example where you have to prioritise either shadow detail over highlight detail, or vice versa. That's where Canon's Digital Photo Professional (DPP) editing suite comes in handy, as it extends to consumers of the brand an incredibly useful exposure adjustment tool known as the Tone Curve Adjustment feature. Here photographers can place points on the tone curve and pull them up or down to affect the depth of shadows and/or the brightness of highlights. Doing so results in a correctly exposed frame, which improves the appearance of the whole image.



**Highlights helped**
By marking and dragging down areas at the top-right of the graph, we can dial back the brightness of the highlights

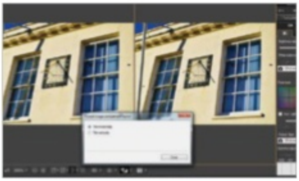
**Highlight detail**
A large proportion of this image is overexposed and so details are blown out

**Shadow detail**
There are areas in the windows that are immersed in shadow so the details here are lost

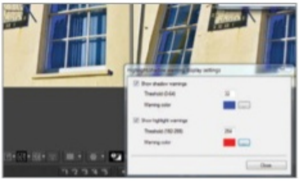
**Shadow saved**
By plotting and pulling up points at the bottom-left of the graph, we can lift the shadows to reveal hidden details

## Manipulate exposure in DPP

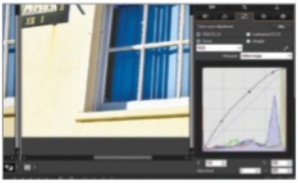
Balancing exposures manually in-camera can take time and skill, which some shooters may not have. When you use automatic or scene modes, the camera makes its best guess at what the correct exposure is, but this isn't always right. So whether you're shooting manually or automatically there may be room for improvement in regards to getting the perfect exposure. With your images loaded into the editor, select the Edit tab and follow our three-step solution below. What we are looking to do here is draw out the details in the shadow areas by lifting the severity of the dark tones, to make the area lighter. Conversely, with the highlights we want to soften their brightness and eek out any details that may have been lost. The trick here is to do things gradually.



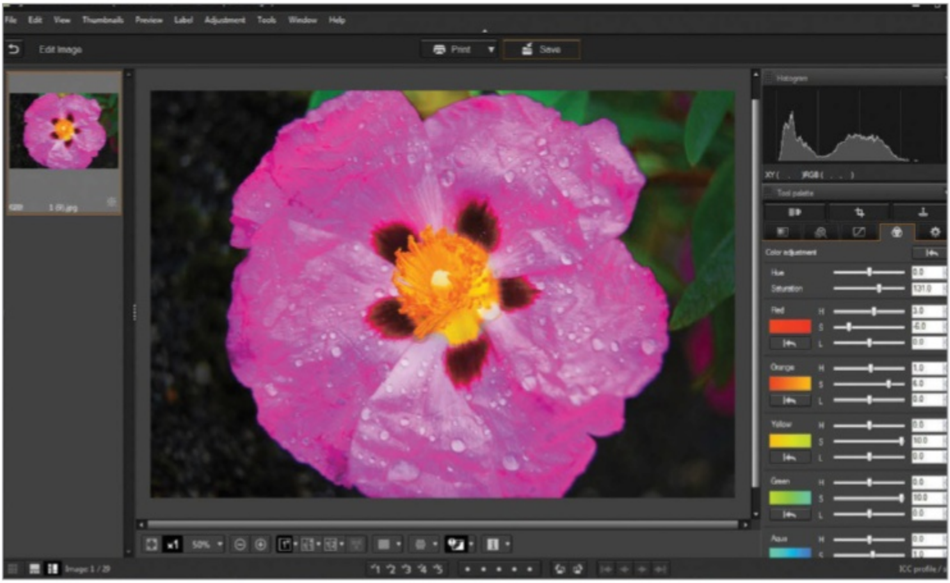
**1 Compare and contrast** Open the Split Screen comparison tool on the bottom bar. Choose whether to align before and after images vertically or horizontally. Adjustments appear in the right/bottom screen.



**2 What are we looking at?** If you're not confident with exposure, activate the highlight and shadow warning button. On the pop-up panel, select both shadow and highlight warnings and pick a colour to suit your preference.



**3 Execute exposure** Look at the graph on the right, select the RGB option. Use your cursor to plot points on the graph and move them accordingly. Reduce the blue and red areas (or the colour you have changed the warnings to).


File
Edit
View
Thumbnails
Preview
Label
Adjustment
Tools
Window
Help
Edit Image
Print
Save
Histogram
Tool palette
Color adjustment
Hue
Saturation
Red
Orange
Yellow
Green
Aqua
ICC profile

# Experimenting with colour

Inject some colour into your Canon imagery, transforming shots from mundane to masterful

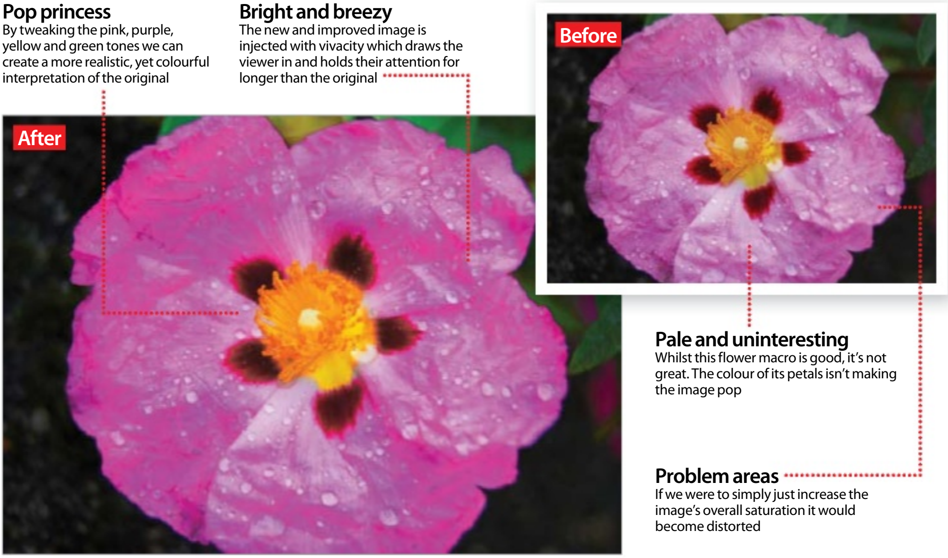
Colour can make or break an image; it either sells the picture or it doesn't. Often colour adds interest, aids composition and draws the viewers' eye in, but get it wrong and it can be overlooked or even distracting for the viewer to behold. If you're going to take an image of something because of its colour then you need to make sure it's full of vibrancy and vivacity, and the main focus of the shot. This isn't always possible to do in-camera, even with Canon's brilliant array of colour picture modes and creative filters. The best solution is to shoot the subject, ensuring the exposure and colour balance are well-metered and as accurate as possible, and then open the image up in DPP for a little post-shoot razzle dazzle.

## Use it to

**Independent colours**
In DPP's Adjust Image Colors palette, users can adjust the hue and saturation of individual colours independently from one another.

**Brighter or subdued**
This tool can also be used to subdue tones; which is ideal for converting images to black and white.

**Hue happy**
As well as affecting the saturation of a selected area or the overall colour, users can influence the hue.



**Pop princess**
By tweaking the pink, purple, yellow and green tones we can create a more realistic, yet colourful interpretation of the original

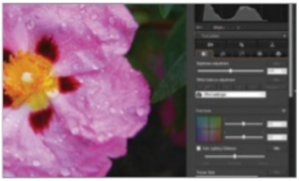
**Bright and breezy**
The new and improved image is injected with vivacity which draws the viewer in and holds their attention for longer than the original

**Pale and uninteresting**
Whilst this flower macro is good, it's not great. The colour of its petals isn't making the image pop

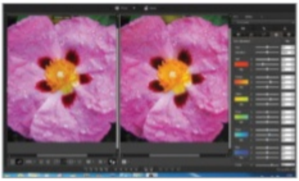
**Problem areas**
If we were to simply just increase the image's overall saturation it would become distorted

## Take your image from drab to dazzling

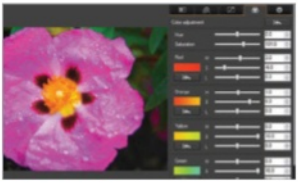
Colour is so important to the overall impression and success of an image. There are some measures we can take when shooting a subject, such as nailing the perfect exposure and perfecting white balance, but there are also ways of ramping up those tones post-shoot. One method is to increase the image's saturation or change its hue. The trouble with doing this is that you alter the saturation of every single colour or hue, which may work occasionally but more than likely it will just distort the image as a whole and end up looking odd. The beauty of DPP is that you can actually change each colour's saturation and hue individually. Let's get cracking by selecting an image that could do with some extra va va voom and then follow the information for transformation below.



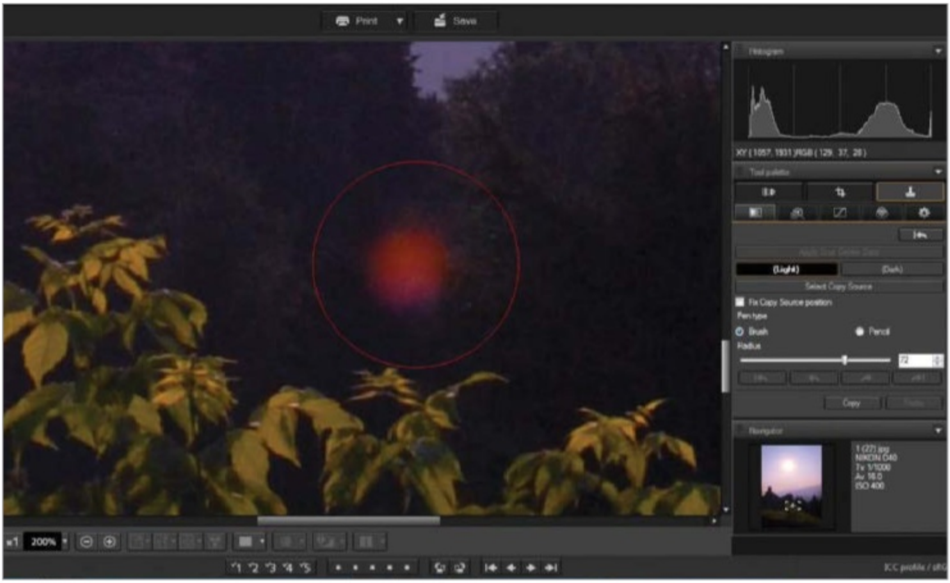
**1 Pump it up** Brightness can often be a virtue where photography is concerned, so with the basic adjustments panel open, pull the Brightness adjustment slider to the right; just enough to lift it a little. We don't want to go too far here.



**2 Compare and contrast** Open the Compare tool. Scroll through the list of colours and pull the S (saturation) slider to the right to brighten. If there are any colours that you think are distracting, pull it left or adjust the hue (H).



**3 Final tweak** With your image pumped full of colour, go to the top of the palette to find the Saturation slider affecting the vivacity of the image. Pull the slider to the right, just a gentle notch, to give it one last boost of boldness.


Print
Save
Histogram
XY (1057, 1931) RGB (129, 37, 28)
Tool palette
(Light)
(Dark)
Select Copy Source
Fix Copy Source position
Pen type
Brush
Pencil
Radius
Copy
Paste
Navigator
1 (27).jpg
NIKON D40
Tv 1/1000
Av 18.0
ISO 400
200%

## Use it to

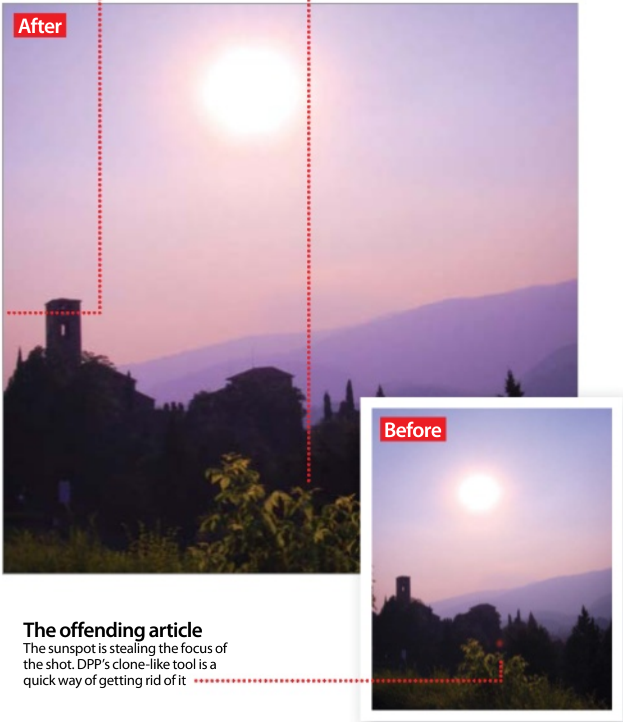
**Clone good areas**
The tool works by cloning a 'good' area and covering the 'bad' area, enabling you to quickly erase annoying elements.

**Alternate method**
For faster coverage, use the Select Copy Source to speed things up.

# Removing spots, dust and distractions

Discover how to use Canon's DPP software to rid your images of sun spots, dust and distractions

We've all been there; you've found the perfect scene or subject so you've cued up a lovely composition, perfected the exposure, ensured an accurate white balance only to get home and find something that's stolen the focus for the wrong reasons. It could be a jot of dust, a blazing sunspot or something that's too distracting to stay. Thankfully Canon's DPP software provides just the tool for the job; a stamp that clones and covers these unwanted blights, leaving you with literally spotless, and flawless images.



**Trimmed bush**
Using the Crop tool, we removed the distracting leaves that were hunched around at the edge of the frame

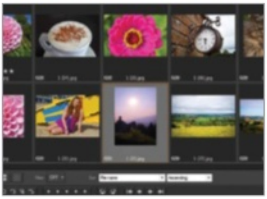
**Spot be gone**
Using the DPP's Select Copy Source tool, we were able to get rid of the sunspot in seconds

**The offending article**
The sunspot is stealing the focus of the shot. DPP's clone-like tool is a quick way of getting rid of it

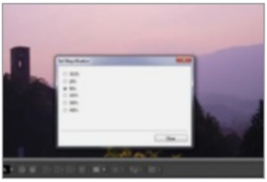
## Clone and cover

Sunspots, dust marks, dead pixels, a floating head; all these things and more can drag the focus from your carefully composed focal point and onto itself. An unwanted element such as one of these things can instantly ruin a photo, staring out at the world like an obnoxious zit. Have no fear though, DPP is here to save the day, as it offers a user-friendly clone-like stamp that can absorb an area around the offending article and cover it quickly and completely so that no-one ever need know it was there. The trick with this tutorial is to get nice and close to the article so that the cover-up is as discreet as it can be and any damage is limited to the smallest possible area.

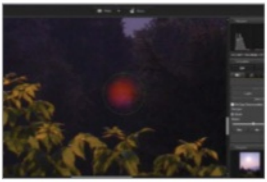
## Remove articles



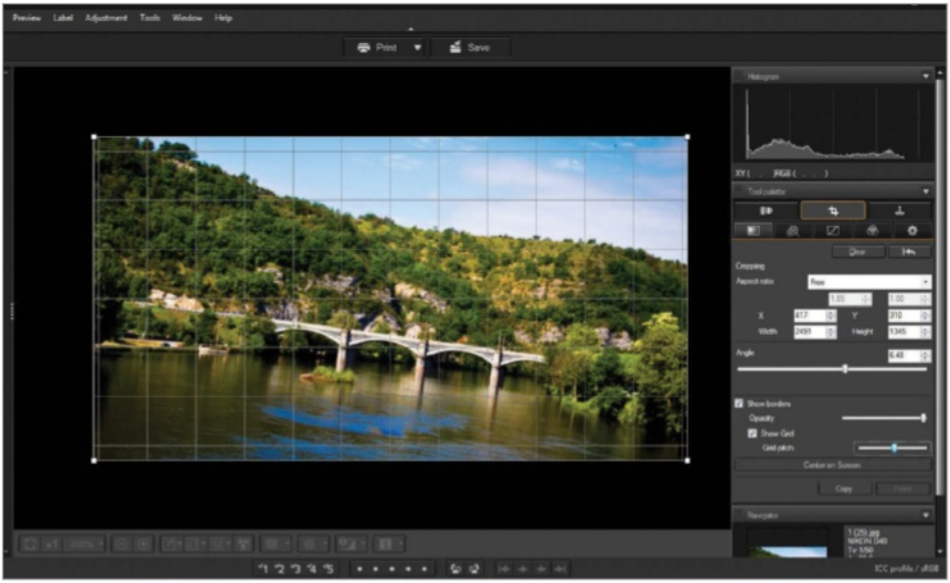
**1 Make a selection** Open DPP and locate the image to edit using the Source panel on the left. Once selected, plump for the Quick Check option, opening preview-style suite where you can zoom in close to find all offending articles.



**2 Edit time** Go back to the library screen and click on Edit Image from the tab choices at the top. Once in the Edit suite, click on the Magnification drop-down menu and from the pop-up panel, select 200%. Next move the cursor to where the article is.



**3 Copy to cover** Choose the tab on the tool palette that is highlighted with a stamp. Click on Select Copy Source, find a 'good' area in the image and then click on the bad area to conceal it. You can use the slider to influence the size of the spot.



## Use it to

**Level lines**
We can twist images until they align with the grid lines to make horizons straight.

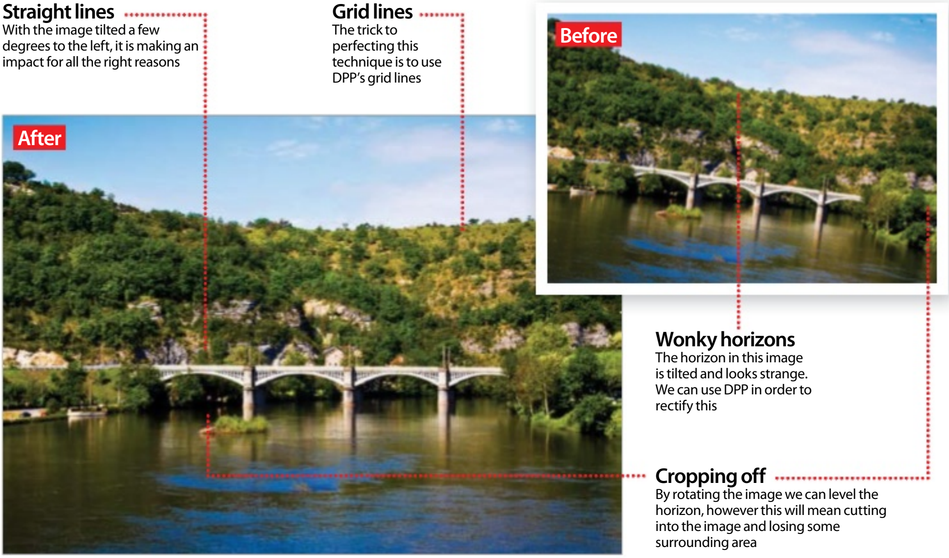
**Crop off**
This tool can also be used to crop off areas around the edge of the frame.

**Focus attention**
By perfecting horizons and cropping off unnecessary peripheral action we can channel the viewer's attention to the focal point.

# Straighten horizons

Learn how to correct wonky horizons to increase the impact of your landscape images

Landscapes can be as captivating as they are challenging. There are so many elements at play it can be tricky to get everything right; lighting, exposure settings, composition, stability, level horizons and more. As landscapes typically require a long depth of field to ensure as much as possible is in focus, it's common to use a narrow aperture and a longer shutter speed. Therefore, for the images to be crisp and not fall victim to image blur, a tripod is needed. Most contemporary tripods feature a spirit level to aid capturing a straight horizon, however just because the camera is on straight, it doesn't mean the scene in front of you necessarily is, which is why we've included a quick tutorial on how to perfect straight horizons in DPP.



**Straight lines** With the image tilted a few degrees to the left, it is making an impact for all the right reasons

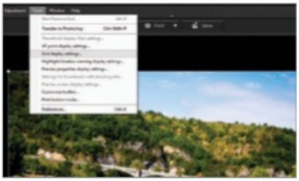
**Grid lines** The trick to perfecting this technique is to use DPP's grid lines

**Wonky horizons** The horizon in this image is tilted and looks strange. We can use DPP in order to rectify this

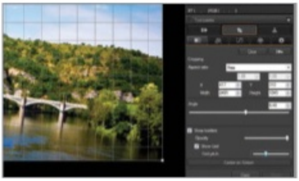
**Cropping off** By rotating the image we can level the horizon, however this will mean cutting into the image and losing some surrounding area

## Straightening horizons

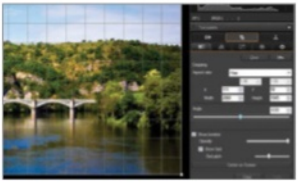
It isn't the end of the world if you have a wonky image; straightening the horizon of images, whether it's a landscape, travel shot, architectural object or vibrant street scene, can be achieved in several different ways in several different editing suites. The bonus of using DPP's method is that it's completely user-friendly and completely comprehensive, so even someone with a very limited knowledge of image editing would be able to achieve the correct result in minutes. The technique we want to use here simply involves summoning DPP's grid lines, then gentling rotating the frame with the Angle slider so that the horizon aligns onto one of these grid lines. The smart app then crops into the image as needed to form a perfectly composed shot.



**1 Grid options** Once you've opened the wonky image in the Edit section of DPP, head to the menu bar and from the Tools menu pick Grid Display Settings. Choose how many grid lines you want to use (pick more if the horizon is far away).



**2 Gridlines** Select the Crop tab from the Tool palette and check the Show Grid box. Ensure opacity is tugged to the right so the lines are visible. You want one line to be on the wonky horizon; use the Grid Pitch slider to add more lines if needed.



**3 Level head** Hit the Center on Screen button to keep things neat and pull the Angle slider either left or right to twist the image. Gently nudge it until the horizon lies flat on one of the grid lines. Hit return to finalise the crop and trim the edges.

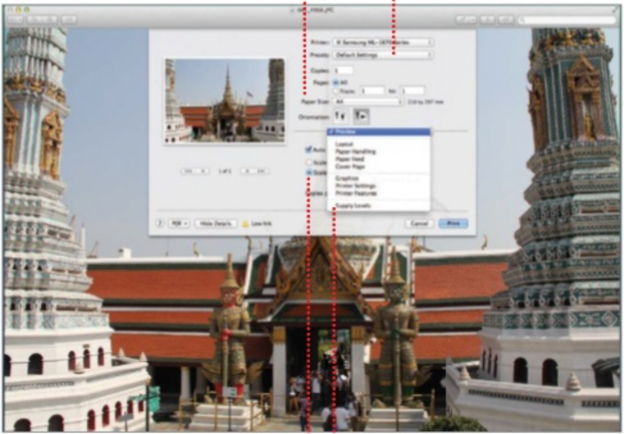
Printer:
Presets:
Default Settings
Copies:
Pages:
All
From:
Paper Size:
A4
Orientation:
Preview
Auto Rotate
Scale:
Scale to Fit
Print Entire Image
Fill Entire Paper
Copies per page:
PDF
Hide Details
Low Ink
Cancel
Print

# Printing images

## Print your top-quality Canon images from home or order prints of your best photography online

Sharing photographs online may be the easiest way to exhibit your work, but nothing beats a printed image that can be physically put on display. The act of printing photographs has diminished, but it doesn't take much work to create high-quality prints of your favourite image at home using a standard printer. When printing photographs at home it's advised that you print using photography paper, which is a little more expensive than normal paper but the jump in quality is massive. Purchase from a stationery store or online.

▲ **Preparation is key** Take the time to set up your photographic printout correctly to get the best possible results



**Size and orientation** Swap between landscape and portrait with Orientation. Change the paper size depending on what paper type you are using

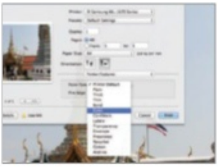
**Presets** Once you've managed your print settings you can save it as a preset to be used again

**Scaling** The way an image is scaled on the paper will affect how it prints and how much of the image is cropped

**Advanced tools** Most printing tools will offer different options for printing, including paper type

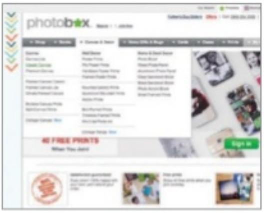
If you don't own a printer there is a variety of online printing services available, including Flickr's print ordering tool and sites such as **photobox.co.uk** which offers a variety of different print types to be ordered and delivered to your home. Ordering prints online is great for creating high-quality photo books, portfolios or large prints of your photography.

When printing from home, there is plenty of different software available that provide printing options. The anno above refers to printing using Apple's Preview software. Depending on what software you prefer, you'll find some of the settings may vary, but the general instructions for printing will be the same.

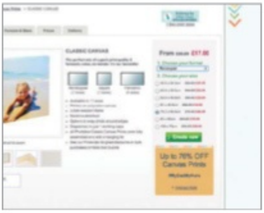


Paper type determines the quality of the print; ensure it matches the paper you're using.

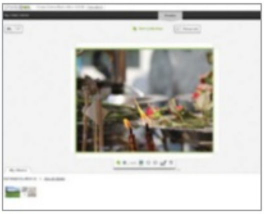
## Ordering online prints



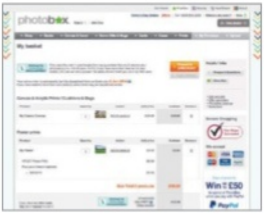
1 **Select a product** Once you've found a printing service, select a product such as a canvas print.



2 **Preferences** Select a size and format. Each product will have different options and prices.



3 **Image upload** Import an image to preview, adjusting its size and formatting if needed.



4 **Purchase your print** Add payment and delivery details then make your purchase.

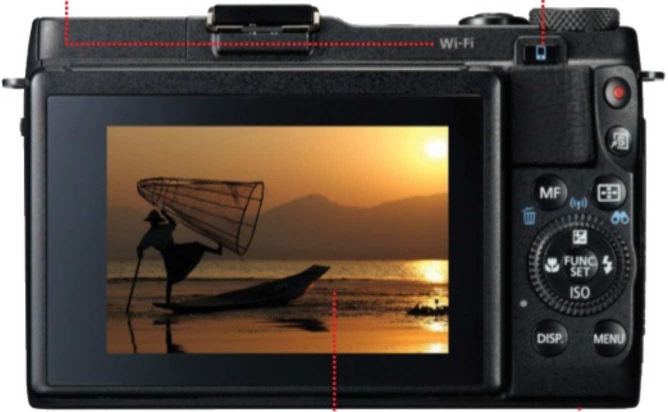
CANON DC
No. of images: 35
Canon
CANON ZOOM LENS 5x IS
G16
1.8-2.8

# Wireless sharing

## Find out what Wi-Fi options Canon cameras have, what they can do and why you want to use them

The idea behind integrated Wi-Fi technology in cameras is that it's a quicker, easier way of sharing photos and videos, particularly when you're away from home or the office. Files can be uploaded directly to the internet from the camera, to be shared via email, Twitter, Facebook or YouTube. Photographers can back up their pictures via the cloud using Image Sync or the Send via Server function, to their CANON iMAGE GATEWAY, Flickr, Google Drive accounts and to their own personal computer simultaneously. What's more, Wi-Fi clad Canon cameras and printers can communicate with each other, so that you can print images without getting tangled in wires.

▲ **Go wireless** Most new Canon cameras ship with both Wi-Fi and NFC connectivity fitted as standard



**Services**
Using the camera's Wi-Fi and NFC technology, users can send, share, post, back up and connect with other Canon cameras, printers or smart devices

**Buttons**
Some Canon cameras feature specific Wi-Fi, Mobile Device Connect and/or NFC buttons for faster access

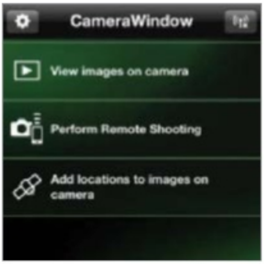
**Canon CameraWindow app**
To access some features, like connecting to a smart device or using the device as a remote control, users will first need to install the Canon CameraWindow

**Geotagging**
Another useful tool is the ability to use the GPS-equipped smart device and geotag images captured with your Canon

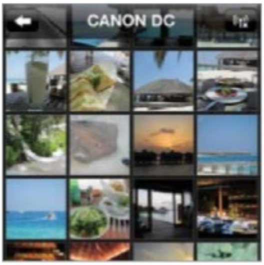
In regards to your camera's NFC powers, when used in conjunction with the free Canon CameraWindow app, photographers can connect their Wi-Fi shooter to Android and Apple smart devices, which means instant sharing, storing and reviewing, especially as a range of new Canon cameras sport a dedicated Mobile Device Connect button and NFC to make this even simpler. The final facet of this effort-saving technology is that photographers can use the dedicated app to fire the camera's shutter remotely, which is ideal for numerous reasons, such as getting the camera closer to wildlife and for the photographer to be able to appear in group shots.

Connect a Wi-Fi Canon camera to a wireless Canon printer to create prints in seconds.

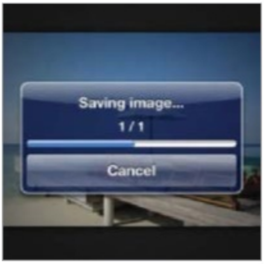
## Top Wi-Fi and NFC tips



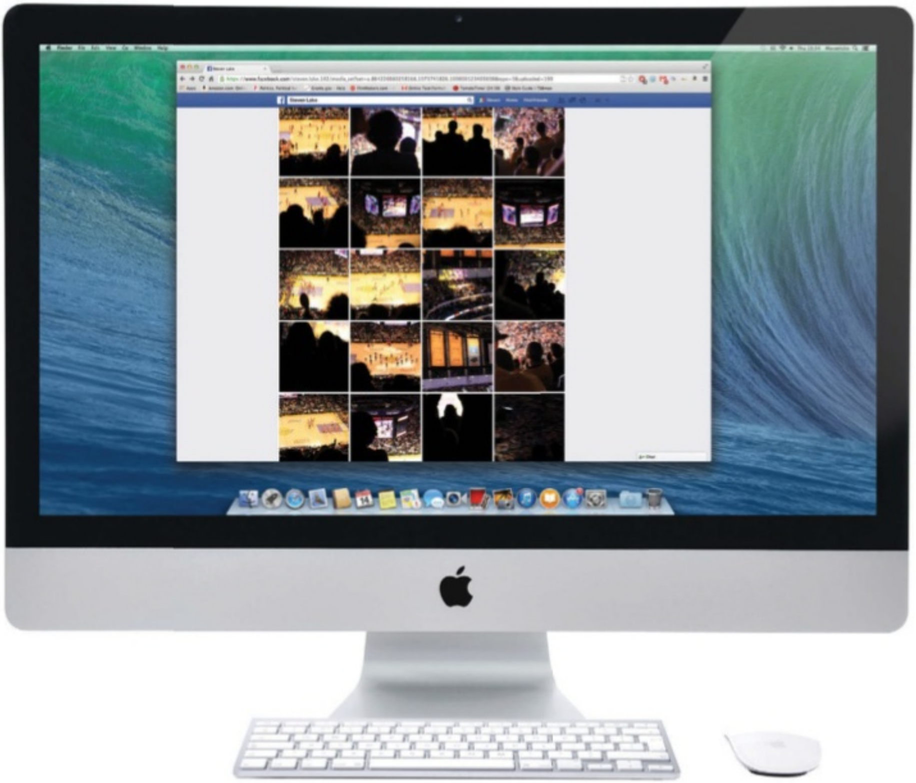
**1 CameraWindow app**
Download the app and input the relevant information. When it's installed and connected to your camera, you're ready to go.



**2 What to do first** Open the app. You'll be able to view images on your camera, perform Remote Shooting or add locations to the images on your camera.



**3 View and share** One thing you can do with NFC and the app is view a camera's images and save to your smart device, ready to edit, email or post online.



▲ **Create a gallery** Exhibit your best photos online. Share, edit and tag photographs using Facebook's gallery creation tool

# Share on Facebook

Share your best work with your friends by uploading your Canon images to a Facebook gallery

Facebook is perfect for sharing photos, since you've already got an audience to see them! Photos can be uploaded in a variety of ways; you can upload individual images to a Facebook post adding location information, other users and a status update, or you can add entire galleries of images in the form of a Facebook gallery.

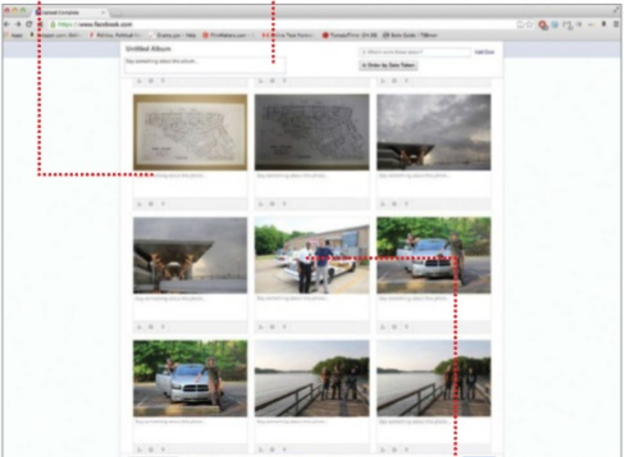


**Image info**
Add friends, date and location information to your photos

**Album details**
Add a title, description date and location to your album

**Quality**
Click here to make sure your images retain their quality

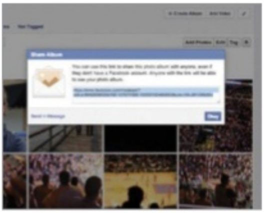
**Auto tagging**
Facebook will automatically add tag boxes to faces. Click on it to tag the person

Galleries can also include videos. In the Status Update window click Add Photos/ Video. Here you'll be able to choose whether you want to upload individual photos or an entire album. Click Create Photo Album. Select the images from your computer that you want included and click Open.

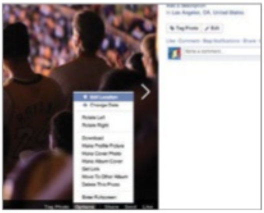
You can edit and manage your photos in the Upload window while the selection is uploaded. Click the drop-down arrow in an image thumbnail to remove the image or make it your album cover. Click and drag a photo to change its order in the album. Once uploaded, select who you want to have access to the album then click Post Photos, posting the album in a status update.

Identify all faces recognised in the images. This will increase your album's popularity.

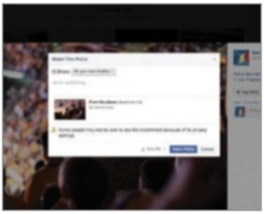
## Facebook album tips



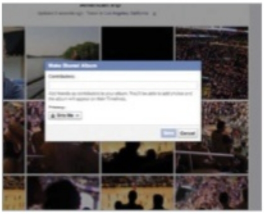
**1 Share with anyone** Click the settings icon, then Get Link to share your album with anyone.



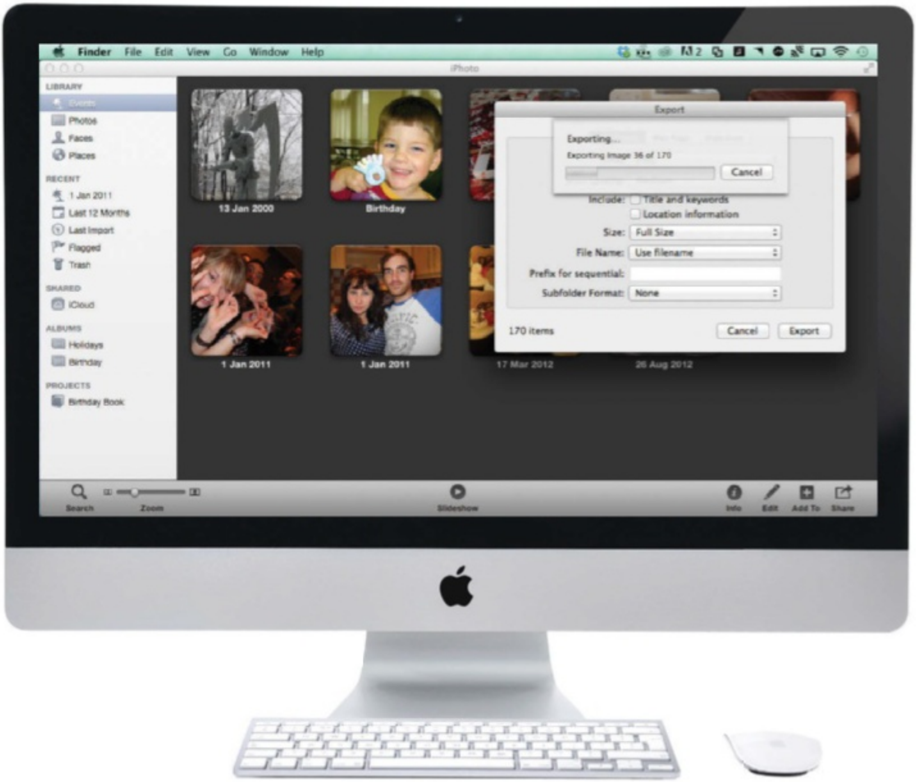
**2 Image options** Click an image then click Options to download, or re-organise an image.



**3 Share a photo** When viewing an image, click Share to send it to another user's timeline.



**4 Shared Albums** Click Make Shared Album so others can edit and upload images to it.


Finder File Edit View Go Window Help
iPhoto
LIBRARY
Events
Photos
Faces
Places
RECENT
1 Jan 2011
Last 12 Months
Last Import
Flagged
Trash
SHARED
iCloud
ALBUMS
Holidays
Birthday
PROJECTS
Birthday Book
13 Jan 2000
Birthday
1 Jan 2011
1 Jan 2011
17 Mar 2012
26 Aug 2012
Export
Cancel
Export
Search
Zoom
Slideshow
Info
Edit
Add To
Share

Exporting...

Exporting image 36 of 170

Include: ☐ Title and keywords

☐ Location information

Size: Full Size

File Name: Use filename

Prefix for sequential:

Subfolder Format: None

170 items

# Back up your photographs

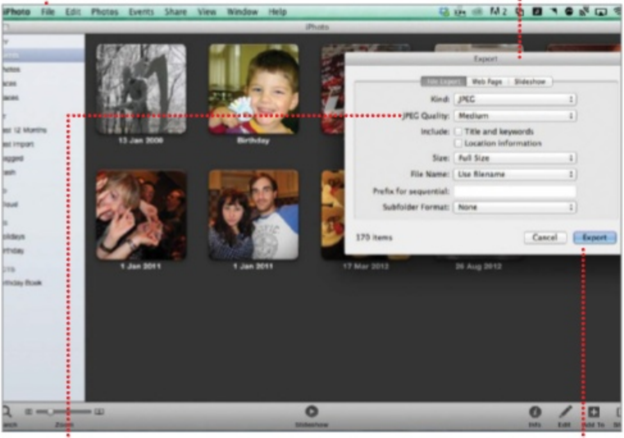
Ensure that your Canon photos are always going to be safe and secure by setting up a backup system

▲ **Keep them safe** With a hard drive or cloud storage backup solution, you can secure your photos cost effectively

Backing up photographs taken on your Canon is crucial in securing your images. There is always a risk that a hard drive could suddenly fail, so it's important that you have your photos stored on a backup hard drive. Purchase a hard drive online with the capacity to hold your images then drag and drop them into it.

**Backup tools** To export images in a gallery software, go to File>Export for the exporting options

**Batch exporting** Exporting through a gallery software such as iPhoto allows you to batch export all your images at their full, or reduced quality


iPhoto
File
Edit
Photos
Events
Share
View
Window
Help
13 Jan 2008
Birthday
1 Jan 2011
1 Jan 2011
17 Mar 2012
26 Aug 2012
Export
File Export
Web Page
Slideshow
Cancel
Export
Slideshow
Info
Edit
Add To

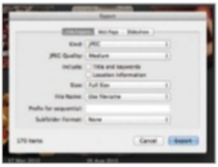
Kind: JPEG
JPEG Quality: Medium
Include: ☐ Title and keywords
☐ Location information
Size: Full Size
File Name: Use filename
Prefix for sequential:
Subfolder Format: None
170 items

**Image formatting** Select a file type and size. If you can spare the space, export at the highest quality available

**Export to device** Click Export to pick a destination to export to, ideally an external hard drive which can be stored separately from your master copies

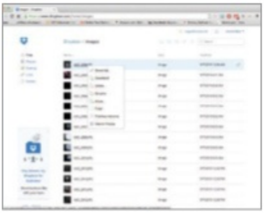
There are other cost-effective options for backing up your images. Free image library software is provided by both Windows (Photo Gallery) and Apple (iPhoto). These enable you to export your entire library to an external storage device.

Another option is to use a cloud service where you can access and download your photos at any time. Services such as Google Drive and Dropbox make this easy, providing you with desktop folders that you can simply drag and drop your files into. If you are concerned about how much space you will need, then consider batch exporting them at a compressed size. Obviously, the downside to this is that your backups will have a reduced quality.

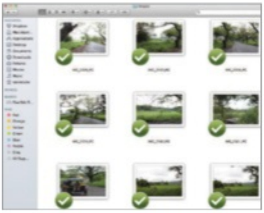

Export
File Export
Web Page
Slideshow
Kind: JPEG
JPEG Quality: Medium
Include: Title and keywords
Location information
Size: Full Size
File Name: Use filename
Prefix for sequential:
Subfolder Format: None
170 items
Cancel
Export

Most batch backup software has a renaming option. This prevents duplicate names clashing.

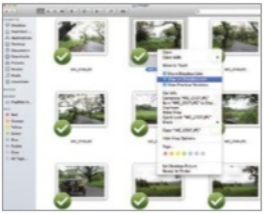
## Work with Dropbox



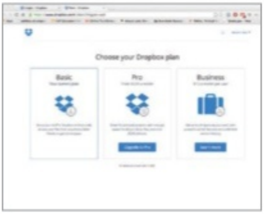
**1 Dropbox.com** Visit the site and sign up to get free storage space to upload images.



**2 Dropbox software** Add images to your desktop Dropbox folder to upload them.



**3 Manage and share** Right-click a Dropbox-stored image to view it at **dropbox.com** or share it.


Choose your Dropbox plan
Basic
Pro
Business

**4 Upgrade Dropbox** You can upgrade to back up more than 20,000 images.

The wider the aperture, the shallower the focus of a shot becomes

When increasing ISO, you'll notice more grain, brightening the shot but decreasing quality

A slow shutter speed can be used to create interesting effects with motion

This photograph was taken with a wide aperture, narrowing the overall depth of field

Gradient filters can be used to evenly expose the sky and land in landscape images

# Glossary

Find out what the most relevant terms in Canon photography mean, and why they're important

**AF (auto focus)** Most new lenses come with an auto focus function, making focusing on your subject easy. The faster a lens the quicker it will be able to focus, helping you capture that crucial shot.

**Aperture/ F Stop** Use aperture to control your Canon camera's exposure. The wider the aperture of a lens (a low f-stop), the more light will pass through it. The smaller the aperture (a high f-stop), the less light.

**Aperture Value mode** Setting your camera to Aperture Value allows you to adjust the aperture to your liking, while the camera's Auto function will change the shutter speed and ISO to give you a constantly even exposure.

**Bokeh** A type of focusing effect that draws attention to areas of a shot that are out of focus, creating circles out of any highlighted area. The roundness of the circles relates to the roundness of the lens.

**Depth of field** Describes how much of the shot around your point of focus is out of focus. A wider aperture will narrow the depth of field, and a smaller one will widen it.

**EF/EF-S/EF-M** EF-S lenses are designed for smaller bodied APS-C cameras; EF lenses fit with full-frame and film cameras; while EF-M lenses are designed to work with the CSC model the EOS M.

**E-TTL** This stands for 'Evaluative Through The Lens'. If this is selected when using a flashgun, the camera will work with the flash to set the power level that's needed automatically.

**Exposure** When shooting photography use your camera's light meter to determine the correct exposure of a shot. The exposure of a shot will depend on the ISO, aperture and shutter speed settings. All three of these tools can be used to create an even exposure.

**FPS** Stands for Frames Per Second. This is the amount of shots a camera can fire off when you hold down the shutter button in a single second. This varies from camera to camera and higher frame rates are better for sports photos.

**Grid** The grid view can help you better compose you shot. The grid breaks up your shot into three vertical and three horizontal sections. This makes it easier for the shooter to apply the rule of thirds to their shot.

**Histogram** A histogram is a graph that can be viewed on your Canon's LCD to display a shot's highlights, midtones and shadows, helping you to better manage its exposure levels. Histograms are a useful reference point when working with bright shots that are hard to expose by eye.

**IS (Image stabiliser)** Often a Canon lens will come with an image stabilisation function. IS works best to reduce minor shake when taking a shot, and is especially useful for shooting video.

**ISO** If you're struggling for light, use ISO to bump up the brightness. Increasing a camera's ISO increases the sensitivity of its image sensor.

**Noise** The amount of noise found on a shot will depend on how high the ISO is that you are shooting with. Noise accounts for the graininess of a shot, which is more noticeable in night and low light images.

**Post processing** Refers to editing photographs in editing software such as Photoshop. It's important to try and get your photos as close to perfect as possible when taking them, but if need be you can fix exposure and other issues with post processing, as well as adding artistic effects.

**Prime lens** A prime lens is a lens that has a fixed focal length, such as 35mm. You can't zoom with a prime lens, however the quality of the lens is normally higher than a telephoto lens due to its simplicity.

**RAW/ JPEG** Most DSLRs offer two shooting formats; RAW and JPEG. JPEG's have a lower file size and are already processed. RAW is a higher-quality file size containing much more data, but it's unprocessed so will need editing.

**Rule of thirds** The rule of thirds is a composition term referring to the composition of a shot that places the main point of focus off centre, typically in the upper or lower corner of a shot.

**Shutter speed** The shutter speed determines how long your camera's image sensor is exposed to light. The more light the sensor is exposed to, the brighter the shot becomes. When shooting with a slow shutter speed any movement will blur, so when shooting action use a fast shutter speed.

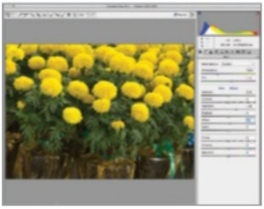
**Telephoto lens** A telephoto lens can zoom between focal lengths, such as 24-70mm. Telephoto lenses let you capture a range of focal lengths without having to change your lens, saving you time when you're out shooting. A quality telephoto lens will be more costly than a prime lens.

**Time Value mode** This mode works in the same way as Aperture Value, but allows you to change the shutter speed to your liking whilst the aperture and ISO is set automatically.

**Vignette** A vignette effect is created in camera when a lens can't evenly distribute light across the camera's sensor, creating dark edges. Vignettes are also used as a way to purposely draw attention to a part of an image.

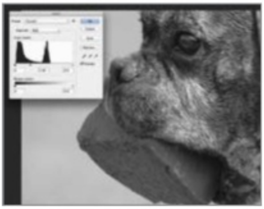
**White balance** Different lighting conditions have different white balances. When shooting indoors, the light is much warmer than when shooting outdoors. Digital cameras allow you to set the white balance to various scenarios, as well as setting a manual white balance.

Candles and tungsten lights create warm shots, whereas natural lighting is much cooler


Raw files allow for much more control of exposure and colour balance

Adding a vignette can help draw focus to a specific part of an image

In this photo, fragmented light is pushed out of focus to create a Bokeh effect


The midtones of this photo have been pushed up, emphasising the dark colour of the dog

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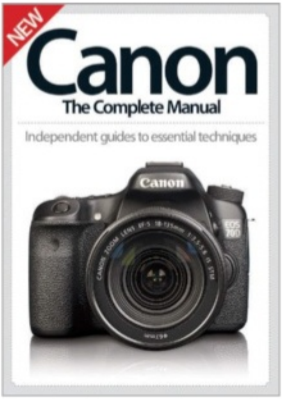
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# Canon

## The Complete Manual

### ✔ Introducing Canon
Get to know the different types of camera and what they are best used for

### ✔ Setting up your camera
A handy guide that takes you through what you will find in the box through to attaching your first lens

### ✔ Choosing the right lens
From shooting portraits to capturing action shots, this guide will highlight the best lens to choose

### ✔ Camera modes
Learn about all of Canon's modes, including Aperture Value and Time Value, and how to use them

### ✔ Using your Canon
Delve deep into the settings of your camera to learn about ISO, perfecting the flash and composing shots

### ✔ Taking great photographs
Discover the best ways to take portraits, landscapes, macros, wildlife, black and white and low light photos

### ✔ Editing your pictures
Get to grips with Canon's own editing software, correcting colours, exposure and more

### ✔ Sharing your photos
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